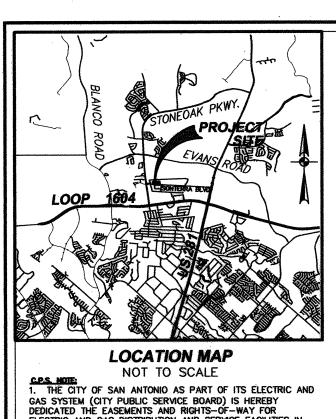
P: \48\71\60\DESIGN\CIVIL\POADP\010221-Poo.



DEDICATED THE EASEMENTS AND RIGHTS—OF—WAY FOR ELECTRIC AND GAS DISTRIBUTION AND SERVICE FACILITIES IN THE AREAS DESIGNATED ON THIS PLAT AS "ELECTRIC EASEMENT," "GAS EASEMENT," "ANCHOR EASEMENT," "SERVICE EASEMENT," "OVERHANG EASEMENT," "UTILITY EASEMENT," AND "TRANSFORMER EASEMENT" FOR THE PURPOSE OF INSTALLING, CONSTRUCTING, RECONSTRUCTING, MAINTAINING, REMOVING, INSPECTING, PACTURE, AND ERECTING POLES, HANGING OR BURYING WIRES, CABLES, CONDUITS, PIPELINES OR TRANSFORMERS, EACH WITH ITS NECESSARY APPURTENANCES TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS OVER GRANTOR'S ADJACENT LAND, THE RIGHT TO RELOCATE SAID FACILITIES WITHIN SAID EASEMENT AND RIGHT-OF-WAY AREAS, AND THE RIGHT TO REMOVE FROM SAID LANDS ALL TREES OR PARTS THEREOF, OR OTHER OBSTRUCTIONS WHICH ENDANGES OR MAY INTERFERE WITH THE EFFICIENCY OF SAID LINES OR APPURTENANCES THERETO. IT IS AGREED AND UNDERSTOOD THAT NO BUILDINGS, CONCRETE SLABS, OR WALLS WILL BE PLACED WITHIN SAID EASEMENT AREA.

2. ANY CPS MONETARY LOSS RESULTING FROM MODIFICATIONS REQUIRED OF CPS EQUIPMENT, LOCATED WITHIN SAID EASE—
MENT, DUE TO GRADE CHANGES OR GROUND ELEVATION
ALTERATIONS SHALL BE CHARGED TO THE PERSON OR PERSONS DEEMED RESPONSIBLE FOR SAID GRADE CHANGES OF

3. THIS PLAT DOES NOT AMEND, ALTER, RELEASE OR OTHERWISE AFFECT ANY EXISTING ELECTRIC, GAS, WATER, SEWER, DRAINAGE, TELEPHONE, CABLE EASEMENTS OR ANY OTHER EASEMENTS FOR UTILITIES UNLESS THE CHANGES TO SUCH EASEMENTS ARE DESCRIBED BELOW.

CONCRETE DRIVEWAY APPROACHES ARE ALLOWED WITHIN THE FIVE (5) FOOT WIDE ELECTRIC AND GAS EASEMENTS WHEN LOTS ARE SERVED ONLY BY REAR LOT UNDERGROUND

5. ROOF OVERHANGS ARE ALLOWED WITHIN FIVE (5) FOOT WIDE ELECTRIC AND GAS EASEMENTS WHEN ONLY UNDERGROUND ELECTRIC AND GAS FACILITIES ARE PROPOSED OR EXISTING WITHIN THOSE FIVE (5) FOOT WIDE EASEMENTS.

THE NUMBER OF EQUIVALENT DWELLING UNITS (EDU'S) PAID FOR THIS SUBDIVISION PLAT ARE KEPT ON FILE AT THE SAN ANTONIO WATER SYSTEM UNDER THE PLAT NUMBER ISSUED BY THE DEVELOPEMENT SERVICES DEPARTMENT.

EDWARDS AQUIFER RECHARGE ZONE NOTE:

TO THE EXTENT APPLICABLE, DEVELOPMENT WITHIN THIS SUBDIVISION IS SUBJECT TO CHAPTER 34, ARTICLE VI, DIVISION 6 ZONE AND WATERSHED PROTECTION," OR LATEST REVISIONS THEREOF.

2. NO PERSON SHALL COMMENCE THE CONSTRUCTION OF ANY REGULATED ACTIVITY UNTIL AN EDWARDS AQUIFER PROTECTION PLAN ("WATER POLLUTION ABATEMENT PLAN" OR "WPAP") OR MODIFICATION TO AN APPROVED PLAN AS REQUIRED BY 30 TAC 213.5 OF THE TEXAS WATER CODE, OR LATEST REVISION THEREOF, HAS BEEN FILED WITH THE APPROPRIATE REGIONAL TNRCC OFFICE, AND THE APPLICATION HAS BEEN APPROVED BY THE EXECUTIVE DIRECTOR OF THE REGIONAL TNRCC OFFICE.

1. 1/2" IRON ROD WITH YELLOW CAP MARKED "PAPE-DAWSON" SET AT ALL CORNERS UNLESS OTHERWISE NOTED.

2. THE BASIS OF MONUMENTATION FOR THIS PLAT ARE THOSE

3. THE BEARINGS FOR THIS PLAT ARE BASED ON THE DEED A 176.4 ACRE TRACT AS DESCRIBED IN INSTRUMENT CORDED IN VOL. 7273, PGS. 273-280 OF THE OFFICIA PUBLIC RECORDS OF REAL PROPERTY OF BEXAR COUNTY,

4. N.A.D. 83 GRID COORDINATES WERE DERIVED FROM BITTERS 1953 (PID AY0072) N=13756584.2745, E=2129377.7379

5. DIMENSIONS SHOWN ARE SURFACE AND THE COMBINED SCALE FACTOR USED IS 0.99988

6. BEARINGS SHOWN MUST BE ROTATED 00'00'52" COUNTERCLOCKWISE TO MATCH N.A.D. 83.

STATE OF TEXAS

THE OWNER OF THE LAND SHOWN ON THIS PLAT IN PERSON OR THROUGH A DULY AUTHORIZED AGENT, DEDICATES TO THE USE OF THE PUBLIC, EXCEPT AREAS IDENTIFIED AS PRIVATE, FOREVER ALL STREETS, ALLEYS, PARKS, WATERCOURSES, DRAINS, EASEMENTS AND PUBLIC PLACES THEREON SHOWN FOR THE PURPOSE AND CONSIDER/ITON THEREIN, EXPRESSED.

William H. Atwell II OWNER LOT 16: ALTEE SONTERRA MEDICAL PARK, LTD. PARK, LTD.

BY: ATLEE DEVELOPMENT INC. GENERAL PARTNER DULY AUTHORIZED AGENT

STATE OF TEXAS

BEFORE ME, THE UNDERSIGNED AUTHORITY ON THIS DAY PERSONALLY APPEARED WILLIAMH. A-LANGIT III., KNOWN TO ME TO BE THE PERSON WHOSE ____, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS

OWNER/DEVELOPER: ALTEE SONTERRA MEDICAL PARK, LTD. 970 ISOM ROAD STATE OF TEXAS SAN ANTONIO, TEXAS, 78216-4135 TEL. NO. (210) 804-4383

THE OWNER OF THE LAND SHOWN ON THIS PLAT IN PERSON OR THROUGH A DULY AUTHORIZED AGENT, DEDICATES TO THE USE OF THE PUBLIC, EXCEPT AREAS IDENTIFIED AS PRIVATE, FOREVER ALL STREETS, ALLEYS, PARKS, WATERCOURSES, DRAINS, EASEMENTS AND PUBLIC PLACES THEREON SHOWN FOR THE PURPOSE AND CONSIDERATION THEREIN EXPRESSED.

STATE OF TEXAS

COUNTY OF BEXAR

NO BUILDING PERMIT WILL BE ISSUED FOR THIS SITE UNTIL A STREETSCAPE PLAN HAS BEEN APPROVED IN ACCORDANCE WITH SECTION 35-512 OF THE UNIFIED DEVELOPMENT CODE.



BEFORE ME, THE UNDERSIGNED AUTHORITY ON THIS DAY PERSONALLY APPEARED Thomas E. Dreiss Known to me to be the person whose ____, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED AND IN THE CAPACITY THEREIN STATED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS JOHN DAY OF MARCH.

LEGEND ELEC. = ELECTRIC TELE. = TELEPHONE CA.TV. = CABLE TELEVISION ESM'T. = EASEMENTGTC = GAS, TELEPHONE, & CABLE TELEVISION EASEMENT B.S.L. = BUILDING SETBACK LINE F.I.R. = FOUND 1/2" IRON ROD. DR= DEED RECORDS OF BEXAR COUNTY TEXAS D.P.R.= DEED AND PLAT RECORDS OF BEXAR COUNTY TEXAS

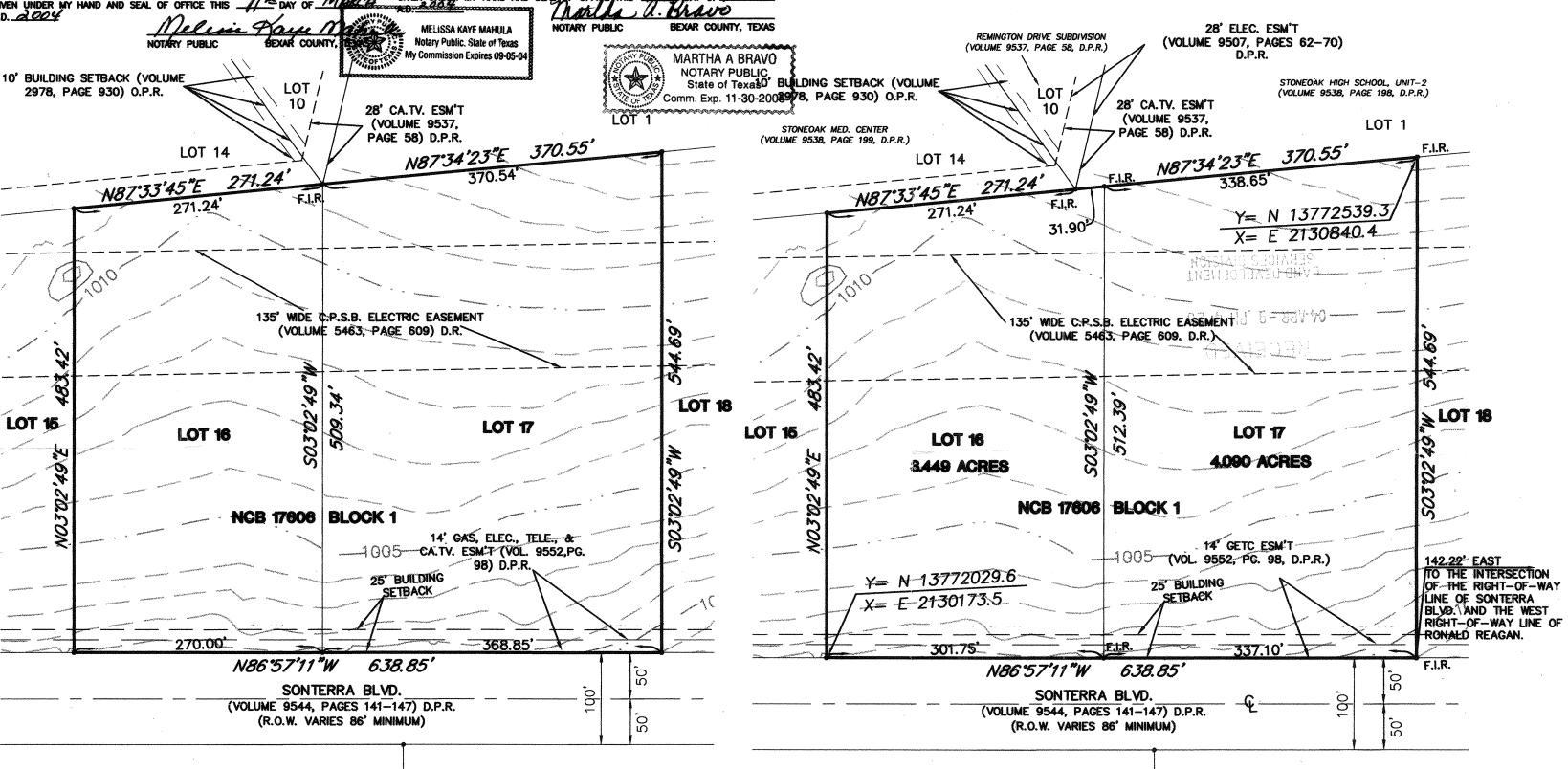
O.P.R. = OFFICIAL PUBLIC RECORDS OF REAL PROPERTY OF BEXAR COUNTY TEXAS GETC = GAS, ELECTRIC, TELEPHONE, & CABLE TELEVISION EASEMENT CONTOUR (1' INTERVAL)

---- CONTOUR (5' INTERVAL)

BUILDING SETBACK NOTE:
SETBACK IMPOSED IN THIS PLAT ARE AT THE DISCRETION OF THE DEVELOPER OR BEXAR COUNTY AND ARE NOT SUBJECT TO ENFORCEMENT BY THE CITY OF SAN ANTONIO.

PLAT NO. 040141 200

1" = 100' (SCALE IN FEET)



AREA BEING AMENDED

THE AREA TO BE AMENDED WAS PREVIOUSLY PLATTED AS LOTS 18 AND 17 (BLOCK 1, NCB 17606) OF PLAT NO. 010421, "SONTERRA MEDICAL PARK", RECORDED IN VOL. 9552, PAGE 98 OF THE DEED AND PLAT RECORDS OF BEXAR COUNTY, TEXAS.

DETAILED STATEMENT OF AMENDMENT:

AMENDING PLAT OF LOTS 16 & 17, BLOCK 1, NCB 17606 SONTERRA MEDICAL PARK

THE PURPOSE OF THIS AMENDMENT IS TO RELOCATE

THE LOT LINE BETWEEN LOTS 16 AND 17. SHIFTING THE

FRONT AND REAR LOT WIDTH DIMENSIONS OF LOTS 16 AND 17, AS WELL AS THE DEPTH DIMENSION ALONG THE

RELOCATED LOT LINE. THESE REVISED DIMENSIONS ARE AS SHOWN ON THIS AMENDING PLAT. ORIGINAL
DIMENSIONS CAN BE REFERRED TO THE PREVIOUSLY

LINE 31.75' TO THE EASTERLY DIRECTION AND MAINTAINING THE PREVIOUS BEARING. 2. THIS AMENDMENT SHALL CAUSE TO CHANGE THE

STATE OF TEXAS COUNTY OF BEXAR

I HEREBY CERTIFY THAT PROPER ENGINEERING CONSIDERATION HAS BEEN GMEN THIS PLAT TO THE MATTERS OF STREETS, LOTS AND DRAINAGE LAYOUT. TO THE BEST OF MY KNOWLEDGE THIS PLAT CONFORMS TO ALL REQUIREMENTS, OF THE UNIFIED DEVELOPMENT CODE, EXCEPT FOR THOSE VARIANCES CRAFTED BY THE SAN ANTONIO PLANNING COMMISSION.



EGISTERED PROFESSIONAL LAND SURVEYOR

STATE OF TEXAS

COUNTY OF BEXAR

I HEREBY CERTIFY THAT THE ABOVE PLAT CONFORMS TO THE MINIMUM STANDARDS SET FORTH BY THE TEXAS BOARD OF PROFESSIONAL LAND SURVEYING ACCORDING TO AN ACTUAL SURVEY MARE ON THE GROUND BY: PAPE—DAWSON Dubron



555 EAST RAMSEY SAN ANTONIO TEXAS 78216 PHONE: 210.375.9000 FAX: 210.375.9010

THIS PLAT AMENDS THE PLAT PREVIOUSLY RECORDED IN THE DEED AND PLAT RECORDS OF BEXAR COUNTY, VOLUME 9552, PAGE 98.

REASON OF AMENDMENT:

APPLICABILITY SEC. 35-440(g)(9)
TO RELOCATE ONE OR MORE LOT LINES BETWEEN ONE OF MORE ADJACENT LOTS IF: (A) THE OWNERS
OF ALL THOSE LOTS JOIN IN THE APPLICATION FOR AMENDING THE PLAY; (B) THE AMENDMENT DOES
NOT ATTEMPT TO REMOVE RECORDED COVENANTS OR RESTRICTIONS; AND (C) THE AMENDMENT DOES
NOT INCREASE THE NUMBER OF LOTS;

THIS PLAT OF LOTS 16 AND 17, BLOCK 1, NCB 17606, SONTERRA MEDICAL PARK HAS BEEN SUBMITTED

TO THE CITY OF SAN ANTONIO, TEXAS, AND HAVING BEEN REVIEWED BY THE DIRECTOR OF DEVELOPMENT SERVICES, IS HEREBY APPROVED IN ACCORDANCE WITH STATE OR LOCAL LAWS AND REGULATIONS AS INDICATED BELOW.

DIRECTOR OF DEVELOPMENT SERVICES

STATE OF TEXAS COUNTY OF BEXAR

COUNTY CLERK OF BEXAR COUNTY. DO HEREBY CERTIFY THAT THIS PLAT WAS FILED FOR RECORD IN MY OFFICE, ON THE _____ AT_____ M. AND DULY RECORDED ____ DAY OF____ A.D._ M. IN THE DEED AND __ DAY OF__ ____ A.D.____ AT__ PLAT RECORDS OF BEXAR COUNTY, IN BOOK/VOLUME _____ON PAGE ___ IN TESTIMONY WHEREOF, WITNESS MY HAND AND OFFICIAL SEAL OF OFFICE, THIS ____ A.D. ___

COUNTY CLERK, BEXAR COUNTY, TEXAS



JOHN K. RINEHART

60375

YCENES?

JOB NO. 5102-31



ATTN: TOM Shutt

City of San Antonio

New

Vested Rights Permit APPLICATION

RECEIVED

02 OCT 18 PM 3: 34

LAND DEVELOPMENT SERVICES DIVISION

Permit File: #1/8/# Date: 1. All applicable information on application must be legibly printed or typed for processing. If application is completed on behalf of the property owner please attach power of attorney or letter of agent. 2. Please complete subject of application and attach 2 sets of all applicable documents (i.e. this application, Master Development Plan (Formally POADP), P.U.D. plan, plat application, approved plat, building permit). Note: All Applications must have a Site Map showing the Area Boundary (Attacked). Concord Corporation 1. Owner/ Agent 800 E. Sonterra, Suite 180, San Antonio, TX 2. Address: **Telephone** # (210) 822-8600 3. Zip: 78258 4. Site location or address 29 Acre Tract NE of the E. Sonterra and Ronald Reagan Dr. intersection 5. Council District 9 ETJ Over Edward's Aquifer Recharge (*) yes () no MASTER DEVELOPMENT PLAN (MDP) (Formerly POADP)* accepted prior to September 1, 1997 are subject to permit right conditions within 18 months from the effective date of the development rights ordinance (9/25/97) and projects submitted after September 1, 1997 are subject to 18 months for the POADP acceptance date. #_____ Name: Date accepted: _____ Expiration Date: _____ MDP Size: ____ acres P.U.D. PLAN Name: _____ #____ Date accepted: Plat Application Plat Name: _____ Plat # _____ Acreage: _____

(Note: Plat must be approved within 18 months of application submittal date).

Approved Plat

Date submitted:

1

Expiration Date: _____

Plat Name:	Plat #	Acreage:	_ Approval
Date: Plat recording Date:	Expiration Date:	:Vol./Pg	
(Note: If plat is not recorded within 3 years of p	plat approval permit i	rights will expire).	
Others Type of Permit: Development Rights Date Date Date Development Rights	te issued: <u>11/07/85</u>	until expiration Date: fu	red without ture commiment
Acreage: 176 Acres			
(Note: Two maps of the area must be provided)		DZ OCT	기기
NOTE: Filing a knowingly false statement on t	his document, or any	attached document, i	s a crime
under §37.02 and §37.10 of the Texas Penal Co in jail and fine of up to \$10,000.	ae, punisnable as a s	tate fall felony by up to	o two years
I hereby certify that all information on this Appli and that it is my belief the property owner is entire	cation and the attache	ed documents are true on the listed location.	and correct
Print name: William T. Ellis, S. V.f. Signa Concord Corporation	ature: Sill S	Date Date	e: 10/16/02
Sworn to and subscribed before me by on this which witness by hand and seal of office.	m day of Octob	20 <u>02</u> to	certify
Notary Public, State of Texas, My Commission e	xpires: Nov.28, 21		State of Texas
City of S	an Antonio use		
o Approved	o D	oisapproved	
Review By:	Date:	E.	

p:\56\25\03\word\forms\021008a1.doc

ne -		Plat #	Acreage: _	Approval
j	Plat recording Date:	Expiration Date	:	Vol./Pg.
Note: If plat is no	t recorded within 3 years of	plat approval permit	rights will e	xpire).
• Others Type of Permit: D	Development Rights D	ate issued: 11/07/85	 Expiratio	until expired without n Date: future commiment
Acreage: 176 Acr				3/2/17 3/2 001 2 CAND IN SERVIO
(Note: Two maps o	of the area must be provided,)		FEVILLOS PR
NOTE: Filing a kn under §37.02 and g in jail and fine of t	nowingly false statement on the ST.10 of the Texas Penal Co up to \$10,000.	this document, or any ode, punishable as a s	attached de state jail felo	octiment, is a crime ony by up to two years
I hereby certify that and that it is my bel	all information on this Appl lief the property owner is enti	ication and the attached to Vested Rights	ed document on the listed	s are true and correct location.
Print name: \\///	ord Gorporation Sign	ature: Sill S	Kir	Date: 10/16/02
Sworn to and subsc	ribed before me by on this 1	6th day of Octob		20 <u>02</u> to certify
Affine (C. Neus			CHRISTINE C. MERY Notary Public, State of Texas My Commission Expires November 28, 2003
Notary Public, State	e of Texas, My Commission	expires: Nov.28,2	203	
	3			
*	City of S	San Antonio use	7	
0	Approved	o I	Disappro	oved
Review By:	Assistant City Attorney			· · ·
		City needs	applicant	t to State is projecto is re the City this application
p.(56) 75031	a a	to be a abo	ut before	re the City
p:\\$6\25\03\\word\forms\02\1008a1.doc		Can properly	process	this application



OF SAN ANTONIO

February 22, 2001

Mr. Brice Moczygemba, P.E.

Pape-Dawson Engineering, Inc. 555 East Ramsey San Antonio, TX 78216

Re: Villages of Sonterra

POADP # 698

Dear Mr. Moczygemba:

The City Staff Development Review Committee has reviewed Villages of Sonterra Subdivision Preliminary Overall Area Development Plan # 698. Please find enclosed a signed copy for your files. Your plan was accepted, however please note the following:

- In consideration of public safety and convenience, excessive grades by reason of topography should be avoided in street layouts and arrangements.
- This development will need to comply with tree preservation ordinance #85262. information about these requirements you can contact Building Inspections at 207-7102.
- It will be expected that you will plat all of the property depicted in your POADP, to include: floodplains, drainage areas and open space.
- I would encourage you to work closely with the school district, so that they can plan accordingly.

Please note that this action by the committee does not establish any commitment for the provision of utilities, services or zoning of any type now or in the future by the City of San Antonio. If the proposed development is not platted in phases this POADP will be invalid.

All Platting will have to comply with the Unified Development Code, Master Plan and Major Thoroughfare Plan for the city of San Antonio.

If you have any questions regarding this matter, please contact Mr. Michael O. Herrera, at (210) 207-7900.

Sincerely

Emil R. Moncidais AIA, AICP

Director of Planning

EM/MH. Jr.

cc: Bob Opitz, P.E., Public Works



City of San Antonio New

Vested Rights Permit

RECEIVED .

APPLICATION

02 OCT 18 PM 3: 34

LAND DEVELOPMENT

		SERVICES DIVISION.
Permit File: #_		Date:
As	ssigned by city staff	
		6
1. All applicable info completed on beha	ormation on application must be legibly prin If of the property owner please attach power	nted or typed for processing. If application is of attorney or letter of agent
2. Please complete su		P 11 1
Note: All Ap	plications must have a Site Map show	ving the Area Boundary, (Attached).
		# P P
1. Owner/ Agent	Concord Corporation	
2. Address:	800 E. Sonterra, Suite 180, San Ar	ntonio TV
3. Zip:	78258	Telephone # (210) 922 000
4. Site location or	address 29 Acre Tract NE of the E	Telephone # (210) 822-8600 Sonterra and Ronald Reagan Dr. intersection
5. Council District	ETJ Over	Edward's Aquifer Recharge (*) yes () no
the development rights for the POADP accepta	or with the control of the control o	ditions within 18 months from the effective date of after September 1, 1997 are subject to 18 months ##
Date accepted:	Expiration Date: _	
6 ORIGINAL DOCUMENT PRINTED ON CH	MEMICAU REACTIVE PAREFRWITH MICROPHINTED BORDE	SEE REVERSE SIDE FOR COMPLETE SECURITY FEATURES 0
CONCORD CORPORATION 800 EAST SONTERRA BLVD. SUITE 180 SAN ANTONIO, TEXAS 78258	100 W.	T NATIONAL BANK . HOUSTON STREET NTONIO, TEXAS 78205
(2 GA)	e e e	
	Date 10/16/2002	Check No. Check Amount 003568 160.00
•	One Hundred Sixty AND 00/100	Dollars
CITY OF SAN ANTONIO	50	San w
P.O. BOX 2910	fidi	wo. Ten
U () U() Y 2040		

SAN ANTONIO, TX 78299-2910



CITY OF SAN ANTONIO

ANDREW MARTIN
City Attorney
Office of the City Attorney
Voice: (210) 207-8940

Fax:

(210) 207-8940 (210) 207-4004

December 26, 2002

J. Russell Davis DAVIS, CEDILLO & MENDOZA, Inc. 755 East Mulberry, Suite 500 San Antonio, Texas 78212-3149

Re: Vested Rights Permit Application No. 03-11-007

Dear Mr. Davis:

It is the opinion of this office that the project for which Development Rights Permit No. 351 was issued on November 7, 1985 still enjoys the rights granted by that permit, and that no further determination of such rights is necessary for that project.

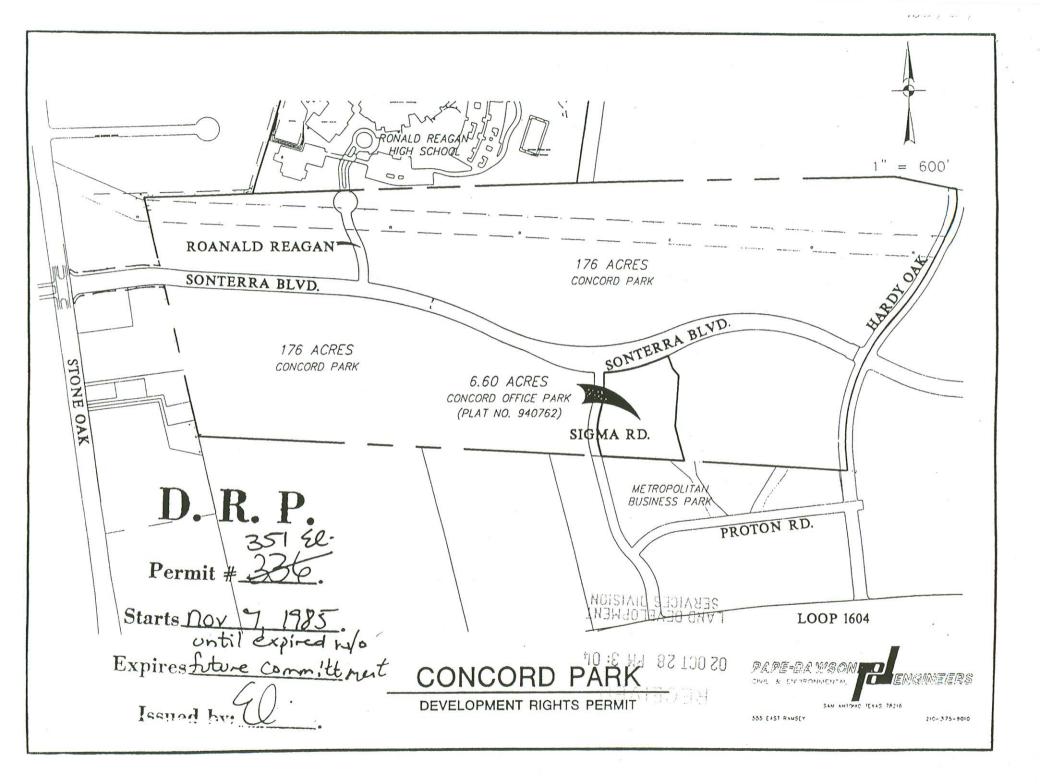
Please note that this opinion should not be used as the basis for future determinations of vested rights.

Sincerely,

ANDREW MARTIN

City Attorney

AFM:TES



City of San Antonio Development Rights Permit Application

Section 1		172		_	
D	AMPI	nit	Fil	0	++
E 6			,	167	11

assigned by city staff

All applicable information on application must be legibly printed or typed for processing. If application is completed on behalf of the property owner please attach power of attorney or letter of agent.

1 0	Concord Corporation	, Suite 303		
 Owner/Agent Address 	200 Concord Plaza Drive, S			
3. Zip:		lephone # <u>210/822-8600</u>	Lagar	
4. Site location or address_	The second secon	-		
5. Council District	ETJ No_		Aquifer Recharge (√) yes () no
application, approved plat, b	plication and attach 2 sets of a uilding permit or evidence of de	velopment infrastructur	re cost).	
	prior to September 1, 1997 are			
	lopment rights ordinance (9/25	(97) and projects subm	itted after September	er 1, 1997 are
subject to 18 months for the l	-			
Name		·		
Date Accepted:	Exp	iration Date:	ADD area or the ba	palraida of this
	acres (if applicable, list plats r			ackside of this
application.)	% of area plat approved/develop	eu	incurred must be at	least \$500 non
Intrastructure cost incurred	(Note: for laditures must be at least \$1,000	OOO In addition was	meurreu must de at	quire that this
	iditures must be at least \$1,000	,000. III audition, use (or this section was re	quire mac mis
form be notarized).	ust be plat approved or infras	ructure cost incurred i	must exceed amount	designated by
	be platted/developed to mainta		mar caccoa amount	atorganitu bj
COUCUI SO /0 OI I OADI IIIUS	be platted de reloped to mainta	Lor were 1 Peres.		
Plat Application				
Plat Name: The Villag	es of Sonterra	Plat # 10	Acreage 6.60	(1) (1)
Date submitted: 07/27/98	Exp	iration Date: 01/26/00	_	
(Note: Plat must be approved	within 18 months of application			
Approved Plat			£11127211111 2	5 = 1
Plat Name:	Dlo+#	Acreage	Approval Date	
	Expiration Date:			52
	within 3 years of plat approval j			Si .
plat is not recorded	midia Jears of plac approval	or mic rights will capite	7.	
Others	*			
Type of Permit #	Date issued:	_ Expiration Date:	Acreage:	
(Note: Two maps of the area		•		
	cost incurred must have this docu	ment notarized - all other	ers may sign and date t	his form.
	and the second s		energy for the Section of the Sectio	
NOTE: Filing a knowingly fa	lse statement on this document, o	r any attached document	, is a crime under §37	.02 and §37.10
	hable as a state jail felony by up to			***
				/ /
I hereby certify that this Applie	orion and the attached documents Date: 2/15/9 e me by William T. Fili's	are true and correct. Prin	nt Name: William	.61115, Sr. V.
Signature: Dell' Cll	Date: 2/15/9 e me by William T. Elli's	2. 11H	Elamo	(Concor
Dirotte to man omodization	-,	on this // 0	day of February	1979
to certify which witness by han	d and seal of office.		.90	1
	, , , , , , , , , , , , , , , , , , , ,	Lucan iana	06 11	1),
Notary Public, State of Texas, 1	My Commission expires: Novem	DO 20,1747	- W. 10	7/14/98
		6,00	MIL	
CHRIS			1 1 1 100 1 10	



April 8, 1999

Ms. Elizabeth Carol Planning Department City of San Antonio P.O. Box 839966 San Antonio, TX 78283-3966

Re:

Concord Park 176-Acres

Dear Ms. Carol:

I am writing in regards to the Development Rights Permits for the above referenced tract. As seen in the attached letter from the San Antonio Water System (Santa G. Rivas), this tract, being situated within the Centre Park tract, is being serviced by a sewer service contract through City Ordinance No. 61797 (attached). As seen in paragraph 4 of the SAWS letter, the contract has expired but SAWS shall continue to recognize and administer the 281-300 and 281-76 joint ventures developmental rights.

We request that you approve this Development Rights Permit.

Thank you for your time and consideration in this matter.

Sincerely,

Pape-Dawson Engineers, Inc.

John-Mark Matkin, E.I.T. Assistant Project Manager

Attachment

4089\04\WORD\LETTER\990408A1

PSPT. OF PLANNING ZANO DEYELOPMENT MOISTURE STIVINGS

17:2 Hd 6- 8d 66

BECEINED

PAPE-DAWSON ENGINEERS, INC.

San Antonio, Texas 78216 | Phone: 210.375.9000 | Fax: 210.375.9010

info@pape-dawson.com



San Antonio Water System

March 17, 1999

Brice Moczygemba, P.E. Hallenberger Engineering, L.C. 11322 Sir Winston San Antonio, Texas 78216

RE: CONTRACT ASSIGNMENT REQUIREMENTS FOR THE VILLAGES @ SONTERRA, UNIT-10 (PAT #940781, MADE UP OF 6.603 ACRES" LOCATED NORTHWEST OF LOOP 1604 & U.S. HIGHWAY 281 NORTH, WITHIN THE 373 ACRE CENTRE PARK TRACT (MUD CREEK TRACT #11), IN BEXAR COUNTY, TEXAS.

Dear Mr. Moczybemba:

Please be advised that the property for which you are requesting sanitary sewer service is situated within the San Antonio Water System's Outer Service Area (OSA) and lies within the Upper Salado Creek Basin.

This property is situated within the Centre Park Tract, which was being serviced by a sewer service contract, through City Ordinance #61797, which was passed and approved on November 7, 1985 for a term of ten (10) years. The original sewer service contract expired on November 7, 1995 (original sewer service contract between the City of San Antonio and 281-300 and 281-76 Joint Venture (original Developer).

281-300 and 281-76 Joint Venture (the original Developer), participated in the construction of the Mud Creek Outfall project. Therefore, the 6.603 acre tract (portion of the original 373 acres) has vested capacity rights (portion 2.99 MGD Peak Flows of total vested capacity rights -or- 2,990,000 GPD of Peak Flows, which equates to 10.688 EDUs per acre. Therefore, as per the participation agreement. Such portion of vested capacity rights for the 6.603 acre tract amounts to a maximum of 70.57 EDUs (approximately 10.688 EDUs per acre).

The original contract has now expired, however, the San Antonio Water System will continue to recognize and administer the 281-300 and 281-76 Joint Venture's (original Developer) developmental rights through the assignment process. These developmental rights, such as vested capacity rights and sewer impact fee credits (if any), which were earned by the original Developer for participating in the construction of the Mud Creek offsite.

Additional on-site and/or off-site sanitary sewer main extensions, lift stations and force main systems, right-of-way acquisitions, and private sewer service lateral(s) required to service the property shall be at the developer's cost along with payment of the applicable sewer impact fees for properties within the SAWS's Outer Service Area (OSA).

1/3

The cost of all on-site and/or off-site sewerage systems required to provide sewer service to the property shall be borne by the Developer and all on-site and/or off-site sewerage systems shall be dedicated to the SAWS for ownership and maintenance.

If the reference tract is being developed by other than the original developer, then two original sanitary sewer service contract assignment documents, fully executed by the two parties, must be submitted for SAWS approval, prior to plat approval/recordation.

In order to obtain approval from the System, the following information shall also be submitted:

- Copy of original sewer service contract (to be provided by this office)
- Two original sewer services contract assignment documents, fully executed and notarized by the assignor and the assignee (*Drafts may be submitted to obtain approval of the format*).
- Trail of ownership chart (see sample enclosed)
- Necessary documentation, including but not limited to: subsequent sewer service contract
 assignments, recorded special warranty deeds (original developer to new developer), which show
 that the assignment under consideration has the legal right to the sewer service capacity or a
 portion thereof established in the original sewer contract.
- Two sets of field notes (project tract)
- Two letter size drawings (project tract showing the breakdown of property ownership, as per the recorded warranty deeds)
- Preliminary Engineering Report (proposed land use, to be within the vested rights)
- Water commitment letter from corresponding agency

Should the Developer desire that the contract assignment process begins and/or if there are any questions regarding information required by Development Engineering, please calls me at (210) 704-7185 or fax (210) 704-7028. Any questions regarding information required by the SAWS's Legal Department should be directed to Shelly Fox, Paralegal, at (210) 704-7248.

Sincerely,

Santa G. Rivas, Utility Service Rep. III Development Engineering Division

Infrastructure Planning

CC: Jose R. Limon, Administrator-Infrastructure Planning Claudia Luna, Engineer-Development Engineering Division Plat File File Post-It Fax Note 7671 Date 2315 pages 20 From Co./Dept. PD Co. CANS

Phone # -325 9000 Phone # 704-7086

WTA: 1mc 10/5/85

AN ORDINANCE 61797

AUTHORIZING THE CITY MANAGER TO EXECUTE CONTRACTS FOR SEWER SERVICE WITH SIX DEVELOPERS IN THE UPPER SALADO WATERSHED.

WHEREAS, several developers have plans to develop certain tracts of land in the Upper Salado Watershed, such tracts being located outside the City limits and outside the tracts being located outside the City's sewer service area; Regional Agent Boundary and the City's sewer service area; NOW THEREFORE:

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF SAN ANTONIO:

SECTION 1. The City Manager is hereby authorized to execute sewer service contracts with each of the following developers for service to their respective tracts referenced below:

- Indian Springs Ranch, Ltd., a Texas Limited
 Indian Springs Ranch, Ltd., a Texas Limited
 Instruction of Loop Mike J. Claypool, partnership, acting by and through Mike J. Claypool, for a 1754.32 acre tract located at U.S. Hwy 281, four (4) miles north of Loop 1604;
- 2. 281-300 and 281-76 Joint Venture, acting by and 2.99 mGi through Randy R. Dym, for its 373.0 acre Centre Park feek Flow tract located on the westside of U.S. Hwy 281, north tract located on the Westside of U.S. Hwy 281, north tract located on the Westside of U.S. Hwy 281, north tract located on the Westside of U.S. Hwy 281, north tract located on the Westside of U.S. Hwy 281, north tract located on the Westside of U.S. Hwy 281, north tract located on the Westside of U.S. Hwy 281, north tract located on the Westside of U.S. Hwy 281, north tract located on the Westside of U.S. Hwy 281, north tract located on the Westside of U.S. Hwy 281, north tract located on the Westside of U.S. Hwy 281, north tract located on the Westside of U.S. Hwy 281, north tract located on the Westside of U.S. Hwy 281, north tract located on the Westside of U.S. Hwy 281, north tract located on the U.S. Hwy 281, north tract located on the U.S. H
 - 3. Nash Phillips/Copus, Inc.,/Denton Development Company, acting by and through Tom Stafford and Cone J. Wells, for a 4035.6419 acre tract located near Bulverde Road and Evans Road;
 - 4. Mike Claypool and Rick Leeper for a 237.54 acre tract located at U.S. Hwy. 281 North and Bulverde Road:
 - 5. John L. Santikos for a 663.260 acre tract located near Bulverde Road and U.S. Hwy 281 North; and
 - 6. F&W, Limited, acting by and through Danny F. Welch, for its 2000 acre Canyon Springs Ranch tract located at U.S. Hwy 281, North, four (4) miles North of Loop 1604.

SECTION 2. A copy of each contract is attached hereto and incorporated herein.

PASSED AND APPROVED this 1th day of Roventer, 1985.

P. 02/22

299 MGD-feak Flows 23,986.667 EDUS for the 373 Acre Troop or 10.688 EDUS/Acre if fro.tated

STATE OF TEXAS X
COUNTY OF BEXAR X

This Contract, entered into by and between the City of San Antonio, a Texas Municipal Corporation, acting by and through its City Manager pursuant to Ordinance N.61797 hereinafter called City, and PARAGON PROPERTIES, hereinafter called "Developer", Witnesseth:

Whereas, the Developer plans to develop an approximate 373.0 acre tract of land located outside the City's Regional Agent Boundary, such tract being shown on the map attached hereto as Attachment 1, and described by metes and bounds in Attachment 2, hereinafter called "tract"; and

Whereas, it is in the public interest for wastewater generated from the tract to be treated by the City; and

Whereas, the present terms and conditions of this Contract are SUBJECT TO amendment when, and if, the Director of the Department of Wastewater Management (the Director) determines that these terms and conditions are in conflict with a new comprehensive sanitary sewer policy (the Policy) which is presently under study and which may be formally adopted by the City Council for supplying sewer service to the Upper Salado Watershed located outside the City's Regional Agent Boundary.

P.03/22

NOW THEREFORE, THE PARTIES HERETO AGREE AS FOLLOWS:

I. DEFINITIONS

- A. <u>Code</u>. City Code of the City of San Antonio, Texas and amendments thereto.
- B. Designated Regional Agent Boundary. By the authority of the Texas Water Quality Board Order No. 72-0120-11 passed and approved on January 20,1972, as amended and as may be amended, the City of San Antonio was designated as the responsible governmental agency to construct, operate, and maintain sewerage systems within a defined geographic Regional Agent Boundary area approximating 360 square miles.
- C. <u>Developer</u>. Owner of the Project, his subsequent purchasers, successors, and/or assigns.
- D. Project or tract. CENTRE PARK, a 373.0 acre tract generally located on the west side of U.S. 281 north of F.M. 1604.
- Any structure, facility, equipment, installation, the purpose and function of which is to receive wastewater from the Project's internal collection system and to transport, treat, and ultimately discharge that wastewater to a receiving stream at a permanent location as determined by City policy. All systems between the on-site system and the receiving stream, and the on-site systems other than properly sized gravity lines, shall be considered temporary facilities until such system(s) are determined by the Director to be an integral part of the City's regional sewerage system. Examples of off-site facilities include, but are not limited to the following: pump, truck, haul and treat operations; temporary treatment plants; lift station and force main systems; gravity flow mains; permanent regional wastewater plants and supporting facilities and improvements or approved modifications to existing facilities, such improvements or approved modifications as more fully defined in Section I, I. Unless otherwise specified in writing by the Director of the Department of Wastewater Management, the City Code and its amendments shall govern the design and construction of the off-site facilities.
- F. On-site. Any structure, facility, equipment, or installation that collects and transports wastewater generated from within the Project to the off-site system at a designated point. The City Code and its amendments shall govern the design and construction of the on-site facilities. On-site public sewage facilities must be

located in adequately sized, and appropriately dedicated public right-of-way in accordance with applicable sections of the City Subdivisions Code Regulations.

- G. Project Master Plan. A document submitted by the Developer to the Director of the Department of Wastewater Management that includes, but is not limited to the following: the overall project boundaries, phases of development, schedule of development phases, projection of wastewater flows anticipated to be generated at each development phase; detailed descriptions of sewerage facilities (off-site and on-site) projected to be built during each development phase.
- H. SAWPAC Study. A presently ongoing study by the Department of Wastewater Management of alternative schemes or methods the City of San Antonio can implement to provide sanitary sewer service to the Upper Salado Watershed outside the existing Regional Agent Boundary.
- I. Improvements or Approved Modifications. Improvements or approved modifications to existing facilities that are determined by the Director of the Department of Wastewater Management to be required in order to accommodate the flows generated by the Project.

II. GENERAL TERMS AND CONDITIONS

The Parties hereto agree to the following general terms and conditions:

The Developer hereby agrees to submit to the Director of the Department of Wastewater Management a Project Master Plan and an Engineering Report (Attachment #3 hereto, as may be amended) as a condition precedent to receiving plat approval for recordation and initial sewer service. It is expressly understood and agreed by the Developer that this initial Master Plan and Engineering Report, along with subsequent amendments and revisions to same should they occur, are included instruments to this Contract and are binding upon the Developer for the purpose of demonstrating to the Director of the Department of Wastewater Management proposed and actual land uses and the resulting sewage flows reasonably expected to be generated from such land uses. Developer further agrees to modify the Plan as may be reasonably required by the Director of the Department of Wastewater Management and to provide the Director of the Department of Wastewater Management with subsequent updated revisions of the Plan and/or Engineering Report made independently by Developer.

- B. The Director of the Department of Wastewater Management, or his designated representative, hereby agrees to forward to Developer upon his request, a copy of the final draft report containing the Upper Salado Watershed Study and related policy issues prior to same being formally acted upon by the Planning Commission of the City of San Antonio. Further, City representatives shall provide Developer upon his request, any subsequently revised draft proposals and a copy of the final Upper Salado Watershed Study and related policies as formally adopted by the San Antonio City Council.
- Any Development within the Project shall be in accordance with Chapters 36 (with the specific exception of Item A (4) of Chapter 36-35, "Extension for Developer Customer") and Article VI of Chapter 42 of the City Code and any revisions thereto as that Article specifically relates to land use, occupancy and resulting wastewater flows. (This section does not place the land within project under the jurisdiction of the City's zoning authority; such jurisdictional authority shall only be acquired upon annexation.) It is the intent of the parties hereto that these Chapters of the City Code, read together with the specific provisions of this Contract, are meant to be cumulative in effect and application. However, in the event of a conflict in effect and/or application, the parties agree that the Contract terms and Attachment #4, Flow Rate Table shall prevail over the City Code Chapter provisions. (The Flow Rate Table establishes the highest flow per category of use to be required by the City. Such rates of flow may be lowered upon the approval of the Director or his designated representative.)
- D. In the event that the appropriate regulatory agency(ies) will allow short term interim sewer services to the Project while permanent off-site facilities are being put into operation, the Developer shall be responsible to provide for interim temporary sanitary sewer pump, truck, haul and treat operations in accordance with the applicable rules and regulations of the Texas Water Development Board as amended or as may be amended.

The Developer shall supply a suitable performance guarantee approved by the Director of the Department of Wastewater Management covering the cost of temporary pump, truck, haul and treat operations for a twelve (12) month period or any portion thereof should the Developer or his agent fail to provide acceptable service.

In the event the City has the necessary and available manpower and equipment resources to provide this temporary service, the City may supply the temporary pump, truck, haul and treat operations as set out herein. In the event the City does supply such service, upon the request of Developer

and with prior approval by the appropriate regulatory agency(ies), and in accordance with the rules and regulations of the applicable Edwards Board Order as amended or as may be amended, the rate of compensation shall be reflective of the cost of supplying such service to the Developer as determined by the Director of the Department of Wastewater Management. The conditions upon which the service shall be provided to Developer are the following:

- The flows generated by the Project shall not exceed a maximum daily average of 10,000 gallons per day, or a maximum peak hourly flow rate of 7.0 gallons per minute.
- In no event shall such pump, truck, haul and treat operation exceed the service period of 12 months from the inception of the service.
- 3. The Developer must, as a further condition to receiving this service, provide and maintain at his expense, adequate holding tank facility(ies) and all-weather access site(s) approved by the Director of the Department of Wastewater Management or his designated representative.
- 4. Timely payment of the then current monthly service charge for pump, truck, haul and treat operations in accordance with a schedule to be determined by the Director of the Department of Wastewater Management.
- E. All initial platting fees shall be paid by the Developer in accordance with the following criteria and shall be a condition precedent for the recordation of each approved plat in the Plat and Deed Records of Bexar County.

The platting fee shall consist of two components. The first is a fixed collection fee for each platted acre. The Developer must develop a minimum of sixty (60) acres of land, or pay an amount equivalent to sixty (60) acres of fixed collection fee. The second is a charge for the projected daily volume of sewage generated by the uses for which the property shall be platted. The volume will be based upon the average flow per acre per day for various land uses as shown in Attachment #4 Flow Rate Table. The Developer must pay a minimum charge for the second component equivalent to 50,000 gallons projected daily volume.

The initial fees for platting in the Project shall be as follows:

 The fixed collection fee component shall be not less than \$ 900 per platted acre; and

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- The volume fee component shall be not less than \$2.00 per gallon per platted acre.
- F. It is hereby understood by Developer and City that a rebate or credit shall be provided to Developer by the City if the fees adopted by the SAWPAC policy are priced lower than those originally paid to City in accordance with Paragraph E, above. Developer and City hereby agree to negotiate the format for that rebate or credit should it become necessary. The above notwithstanding, until such Policy is adopted, these platting fees are subject to any amendments, updates and revisions adopted by formal City Council action.

III. RIGHT OF WAY

A. Right-of-way (Gravity or Pressure Mains and Related Facilities)

If an existing public right-of-way cannot be used for the placement of the off-site sewer facilities, Developer shall provide at Developer's cost at least a sixteen foot (16') wide right-of-way or easement for the off-site system facilities together with a temporary twenty five foot (25') wide temporary construction easement, and shall either dedicate and convey or cause to be dedicated and conveyed the right-of-way or easement to the City or shall grant unto the City by appropriate instruments the right to construct and maintain within said right-of-way or easement any wastewater facilities the City may desire to place therein or on, with said grants to be made to the City by Developer prior to any construction of the off-site system. On-site lines shall be located in adequate public right-of-way or easements in accordance with applicable sections of the City Subdivision Regulations.

B. Right-of-way (Lift Stations)

Developer shall provide suitable amounts of real property or easements at Developer's cost and shall execute instruments conveying appropriate easements to the City at the location(s) of any wastewater lift station which may be constructed as part of both the on-site system or the off-site system, with the size of such site(s) being within the reasonable discretion of the City's Director of the Department of Wastewater Management. The Developer shall further provide suitable all-weather access to such site(s) for heavy equipment as well as provide suitable electric service to such sites, all as approved by, and at no cost, to the City.

77.5-3 12.5-11

Suitable all-weather access is achieved by incorporating construction materials and dimensions which equal or conform, at a minimum, to that specified for residential alleys in "Exhibit A", of Chapter 36 of the City Code.

City may approve, when requested by Developer, an alternate type of surface treatment for each site(s) as it deems necessary to satisfy access requirements.

Legal instruments to include metes and bounds description and a survey plat, conveying appropriate easement intersests to the City for such sites and access right-of-way thereto shall contain reversionary clause that, on the abandonment of such sites and access by the City, as evidenced by certification of abandonment by the City's Director of the Department of Wastewater Management, title reverts to Developer shall submit to the City for the Developer. City's approval, the proposed location of any proposed lift station or treatment plant installation as well as all engineering data pertaining thereto, as the City's Director of the Department of Wastewater Management, or his designated representative deems necessary. Following review by the City, approval or disapproval of proposed location will be given the Developer in writing by the City's Director of the Department of Wastewater Management whose decision is final. It is expressly understood by the Developer that any site or sites must be above either the twenty five (25) year ultimate development flood plain elevation or the one hundred (100) year flood plain base elevation (as defined by City Ordinance No. 48700 as amended or as may be amended) whichever is the most stringent, to be eligible for consideration.

C. Acquisition

If the City determines that it is both necessary and in the City's best interest, to acquire any portion of said right-of-way for lines or lift stations, the City may exercise its powers of eminent domain, where the City has the jurisdiction to so exercise. The Developer shall pay non-City staff costs in connection therewith including independent appraisal fees, expert witness fees, if required, and the amount of Commissioners' or Jury award and court costs.

IV. SANITARY SEWER MAINS, LIFT STATIONS AND TEMPORARY TREATMENT PLANT

Main-Sizing, Grade and Elevation

Developer shall prepare an engineering report covering the on-site and off-site sewer systems to be constructed to serve the tract including adequate provisions right-of-way, to ultimately connect the Project to permanent

off-site wastewater transportation and treatment facilities which are a part of the City's Regional Wastewater Transportation and Treatment System.

City shall review such report and make a determination as to its total adequacy and suitability. City approval in all respects as to system location, size, and grade and invert elevation is a condition precedent to any further obligation of the City.

B. Oversizing

City shall have the right to require the oversizing of both the on-site and the off-site facilities, and shall so notify the Developer in writing at the time of approval by the City of the Preliminary Engineering Report. Such oversizing on the part of the City shall be in accordance with the applicable sections of Chapter 36, City of San Antonio Subdivision Regulations.

Should the City elect to oversize any part of the on-site and/or off-site systems, the City is to be responsible to the Developer for the difference in costs of construction of the size desired by the City and that which the Developer is being required to construct to service his Project. The construction cost for City required oversizing is to be ascertained and agreed to by the City and Developer and reviewed by the Planning Commission prior to any construction of the on-site and/or off-site systems.

Should Developer desire to have capacity in the system in excess of that required by Developer, then Developer shall have the right, with City's prior approval, to oversize any line at Developer's cost. Such additional capacity shall be agreed upon by Developer and City's Director of the the Department of Wastewater Management in writing prior to any construction of oversize lines.

C. Ownership and Operation

Developer shall dedicate, grant and convey all right, title and interest of the Developer in both the realty and personalty associated with the on-site and the off-site systems to the City upon their completion and acceptance by the City. City shall thereafter own, operate, and maintain said systems.

D. Capacity

1. The average daily flows for platting fees determination shall be based on the Flow Rate Table. (Attachment #4).

The sewer main size and the treatment system shall be designed on the criteria of twelve (12) persons per net

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- acre developed and flows of 250 gallons per person per day or as determined by the Director of the Department Wastewater Management or his designated representative.
- 2. Proposed land uses shall be indicated on the Developer's Project Master Plan at the time of plat approval and shall be periodically updated by Developer as further provided for in Section II.A. above herein.
- 3. The Director of the Department of Wastewater Management or his designated representative, shall evaluate the Developer's projected maximum capacity needs and make a final determination of the maximum allowable capacity flows prior to any plat approval.
- 4. The City shall maintain accurate records regarding the Developer's capacity rights in the off-site system, and in the event the Developer exceeds those rights as a result of any subsequent platting or replatting of tract properties, the City shall have the right to either deny plat approvals or refuse to accept flows into the San Antonio Regional Wastewater Transportation and Treatment System that are in excess of the capacity rights reserved to the Developer.
- 5. The above not withstanding, prior to the time that the Developer recoups all eligible off-site construction costs through the credit format outlined in Section VI herein below, the City is hereby granted the qualified and conditional right to connect non-Project wastewater flows to either Developer's on-site and/or off-site systems, whether or not such systems were oversized by City but only pursuant to the following requirements:
 - by Developer's engineering (a) Upon request representative, City's Director of the Department of Wastewater Management , or his representative, employing sound engineering principles practices, shall demonstrate to Developer's engineering representatives in writing prior to proposed use of Project designated capacity (distinguished from City oversized capacity reserved to City) for connection of non-Project flows, that the potentially impacted project on-site and/or off-site systems then contain available, unused, excess, or reserve capacities could temporarily accommodate projected non-Project wastewater flows. City's report will also contain a detailed description and schedule whereby non-Project wastewater flows are projected to be accommodated through new sewer main installations or other forms of relief. Developer's - 1, 0 - C 1 5 5 F1

engineering representative shall be afforded the right to submit a written response to the proposal and City will incorporate appropriate portions of same into any engineering decision or report of the Director which would precede any proposed agreement on the part of the City to allow non-Projected flows to temporarily utilize designated Project capacity.

(b) The City hereby acknowledges that it must afford the Developer this protection in order to preserve the designated Project capacity in both the original on-site and off-site systems in order that Developer can achieve reasonable, full, timely and complete platted development of the Project and meet any contractual obligations Developer might have with others.

It is expressly understood by the parties hereto that upon Developer's recoupment of all eligible off-site construction costs through the credit format outlined in Section VI herein below, the City shall own all permanent off-site facilities and all capacity therein but City shall continue to service the Project by recognizing designated project capacity and actual Project flows. The Developer shall not be denied plat approvals solely on the basis that the remaining designated project capacity is insufficient to accommodate the flows of the anticipated plat and that such insufficiency in the remaining designated project capacity is the result of the City connecting flows to the permanent off-site and/or on-site system generated by non-Project wastewater generators.

E. Sewer Lift Station and Pressure Mains

1. It is expressly recognized that the tract may be situated in more than one drainage sub-basin and that the Developer may seek approval to install on-site and/or off-site pressure main and lift station systems to serve the tract subject to prior approval by the Director of the Department of Wastewater Management. Should Developer so elect, and the City so concur, all systems shall be designed and constructed at Developer's total expense and at no cost to the City. The Developer may have the option of constructing gravity off-site lines so as to develop preferred gravity flows and eliminate the necessity for the pressure mains and lift stations, subject to prior approval by the City of all design, plans and construction of such systems.

- 2. In the event that prerequisite approvals to install on-site and/or off-site pressure main and lift station systems are secured by Developer the Developer shall establish a fund as approved by the City Attorney and the Director of Finance for each lift station and force main system constructed to serve any property within this tract. The creation and approval of said fund shall be a condition precedent for approval by the City, of the plat of the properties for which the lift station and force main system shall be constructed to serve. This fund shall guarantee the payment of a minimum annual fee of \$4,600.00 to the City of San Antonio for each lift station constructed to serve property within said tract for a period of ten (10) years following the post-construction acceptance date of each lift station. This minimum annual fee may be adjusted in the event that the City formally adopts a new lift station operation and maintenance fee schedule.
- 3. The minimum annual fee of \$4,600.00 may be waived by the Director of the Department of Wastewater Management within 30 days after a written request by the Developer when an off-site lift station, in close proximity to the Project boundary, is constructed to facilitate transportation of Project flows to other City-designated off-site facilities in lieu of constructing a temporary package treatment plant to individually serve the Project.

V. MONTHLY SERVICE FEES, WATER PURVEYOR CONTRACT, INDUSTRIAL WASTES

A. Cost of Treatment

Upon completion of the on-site and off-site systems, the City shall be reimbursed monthly for the treatment and disposal of all flows generated by the Project in accordance with the following requirements:

1. Water Service By City Water Board

In the event water service to a subdivision plat within the tract is provided by the City Water Board of the City of San Antonio, the amount of the monthly sanitary sewer service fees for the collection and treatment of wastewater will be those charged to the various customer classifications as set by City ordinances, with collection thereof being the responsibility of the City and its Water Board.

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2. Water Service By Other Than City Water Board

In the event water service to a subdivision plat within the tract is not provided by the City Water Board of the City of San Antonio, the amount of the monthly sanitary sewer service fees for the collection and treatment of the wastewater will be those charged to the various customer classifications as set by City ordinances, with the billing and collection thereof on behalf of the City of San Antonio being the responsibility of the water purveyor. In order to facilitate this arrangement, Developer is required to insert into any service agreement with whatever water purveyor is to supply water services to a subdivision plat within the tract, a provision requiring said water purveyor to enter into a Contract with the City of San Antonio to bill and collect the City's monthly sanitary sewer service fees and transmit said fees to the City all in accordance with a standard City-water purveyor contract. Pursuant, to the City-water purveyor contract terms, the water purveyor shall advise all sanitary sewer service customers that delinquent non-payment of any of the City's sewer fees will call for possible termination of water service in the event that all Administrative remedies of appeal set forth in the City's Sewer User Ordinance No. 60600 , as may be amended, are either exhausted or waived by customer. The City of San Antonio shall not be obligated to approve any plat within the Developer's tract unless and until the water purveyor has executed a contract with the City to provide sanitary sewer service billing and collection services.

B. Enforcement of Industrial Waste Ordinance

The Developer shall cause to be recorded in the deed and plat records of Bexar County a restrictive covenant covering the entire tract. This restrictive covenant shall run with the land in the tract berein described. Such covenant shall contain language expressly granting to the City of San Antonio the right, should the City so elect, to enforce or otherwise pursue to the extent provided at law or in equity, the provisions of the City of San Antonio's Industrial Waste Ordinance, Ordinance No. 57214 as amended or as may be amended, (codified as Chapter 33A of the City Code). The City's rights shall include, to the extent provided at law or in equity, the right of inspection, sampling and monitoring of the collection system to assure Ordinance compliance. Recordation of the covenant shall be a condition precedent for the City's approval of any plats within said tract. The covenant shall be in substantially same form as the covenant attached hereto and incorporated herein as Attachment 5.

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VI. CREDITS

Developer may choose to construct off-site sewer lines and facilities to accellerate extension of sanitary sewer service to the tract. Should the Developer so elect, all such systems shall be designed and constructed at Developer's cost and in accordance with other appropriate sections of this Contract. Developer expressly recognizes and understands that should he construct such off-site lines and facilities, they may not be ultimately considered by the Director of the Department of Wastewater Management as an integral part of the permanent wastewater transportation and treatment system for the Upper Salado Watershed.

In the event that the Director of the Department of Wastewater Management rules that a properly sized, gravity flow off-site line or facility constructed by Developer is a permanent integral part of the wastewater transportation and treatment system for the Upper Salado Watershed, payment of the fixed collection fee component of the platting fees by Developer for further development of this Project in the Upper Salado Watershed shall be offset by credit(s) to the Developer on a per acre basis as established by the Director of the Department of Wastewater Management. The City shall establish a fixed collection platting fee component credit account in the Developer's name to reimburse Developer for "as built" construction costs(engineering costs excluded) paid by Developer to a completing contractor for construction of properly sized, permanent off-site gravity flow lines and facilities.

Such credit account shall set out the number of acres which the Developer shall be allowed to plat without the requirement to pay the fixed collection fee component of the platting fee. Such acreage amount shall be determined by dividing the "as built" construction costs by the amount of the collection fee component of the platting fee which is current at the time the "as built" construction costs are determined. In the event the number of acres credited to the Developer is greater than the acres platted within the Developer's project then the Developer may use such credit towards any other project within the Upper Salado Watershed where permanent off-site sewer service is available.

In addition to any credit granted to Developer as set forth above:

Should the minimal collection fee amount paid by Developer based upon Section II.E.l. herein, be higher than the fixed fee component times the number of acres actually platted in the project, the Developer will be eligible for a credit upon the approval of the Director of the Department of Wastewater Management, equal to the difference in these two amounts. Such credit shall only be applied to additional property platted by the Developer, which is situated outside the Regional Agent Boundary and both within the Upper Salado Watershed and within the Project, as such Project and Watershed are used and defined in this Contract.

C. In the event the minimum charge paid by Developer for projected daily volume in accordance with Section II.E.2. herein, is higher than the amount of the fee component times the actual daily volume flow generated by the project, upon the approval of the Director of the Department of Wastewater Management, the Developer will be eligible for a credit equal to the difference between these two amounts. Such credit shall also only be applied to additional property platted by the Developer outside the Regional Agent Boundary and both within the Upper Salado Watershed and within the Project, as such Project and Watershed are used and defined in this Contract.

VII. DESIGN AND CONSTRUCTION PROCEDURES

A. Design and Construction

All design, as well as construction of on-site and off-site sewerage facilities shall be, as a minimum, in accordance with any and all requirements pertaining to wastewater collection and treatment set forth by the City, County of Bexar, State of Texas and any agency or departments thereof having regulatory authority, such as but not limited to the Texas Department of Water Resources and Texas Department of Health. Additionally, all facilities shall be constructed under the inspection of the City, and until written notice of approval of their construction by the City's Director of the Department of Wastewater Management, no flows therein shall be accepted by the City for treatment.

B. The Developer shall be responsible to pay for all costs associated with the design, right-of-way acquisition, materials, and construction of wastewater treatment plant effluent transportation pipelines, if any, and related appurtenances, if any, at the point of actual discharge to the receiving stream.

C. Award of Construction Contracts By Developer

When the Developer anticipates receiving "credit" from the City for as-built construction costs expended by the Developer to build permanent off-site facilities pursuant to Section VI.A above and when the City elects to financially participate in the oversizing of off-site facilities to be constructed by Developer or his agent, Developer agrees to publicly advertise, award, and construct all portions of

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these off-site system(s) addressed in this agreement. The public advertisement and award of these construction contracts by the Developer shall be as approved by the City and generally in accordance with the State's public competitive bidding statutes governing award and construction of City projects.

VIII. CITY'S OBLIGATION OF PERFORMANCE CONDITIONED

The obligations of the City herein to render services for the acceptance and treatment of wastewater from the tract is conditioned upon present rules, regulations, and statutes of the United States of America and the State of Texas and any court orders that directly affect either the City's Regional Wastewater Transporation and Treatment System or the Project's sanitary sewer collection system. Developer recognizes and acknowledges that if the rules, regulations, and statutes of the United States of America and/or State of Texas that are in effect upon the execution date of the Contract are ever revised or amended to such an extent that the City may be incapable of or prevented from transporting and/or treating the Project's wastewater then no liability of any nature is to be imposed upon the City resulting from a City compliance with such legal or regulatory mandates resulting in the City's inability, refusal or failure to provide transportation and/or treatment of the wastewater generated by the Project due to the above described final actions which are beyond the City's control. The City agrees that it will use its best efforts to prevent the enactment or adoption of such provisions or amendments or the imposition of such Court orders. Nothing herein contained is intended to, or shall create a right in any such state or federal court or agency to enact, adopt, or impose such requirements upon the City to the disadvantage of the Developer. Further, in the event that an administrative or judicial proceeding is commenced either by or against the City concerning the right of the City to perform its obligations hereunder, the City shall move for the joinder of the Developer as a party thereto.

The above notwithstanding, the Developer specifically recognizes that the City is currently being sued by both the State of Texas and the San Antonio River Authority. Such cases are styled State of Texas vs. City of San Antonio, 85-CI3806, and San Antonio River Authority vs. City of San Antonio, 85-CI-03677.

Developer specifically recognizes that any obligations of the City set out in this Contract are <u>subject</u> to the court's holdings in the above referenced lawsuits.

IX. PRIVATE JOINT VENTURE AGREEMENTS

In the event the Developer enters into a Private Joint Venture Agreement covering the costs for supplying sewer service to said tract, the Developer hereby agrees to send a copy of such agreement to the attention of the Director of the Department of Wastewater Magnagement. However, the City shall not be obligated under this Contract to monitor the proper disbursement of credits between the parties to said Private Joint Venture Agreement.

X. ASSIGNMENT

No assignment of this Contract in whole or in part shall be made by the Developer without prior written approval by the City in accordance with the following procedure:

- A. Developer shall notify in writing the City's Director of the Department of Wastewater Management evidencing the purpose, intent, terms and effects of the proposed assignment. Developer shall provide the City's Director of the Department of Wastewater Management with a copy of the proposed assignment.
- B. The Director of the Department of Wastewater Management will review the proposed assignment and shall within thirty (30) days of initial receipt, respond to Developer in writing announcing City's approval, proposed modifications, or disapproval of the proposed assignment.
- C. The City expressly reserves the right to disapprove any proposed assignment for reasonable cause and agrees to provide Developer with a written explanation outlining why a proposed assignment is viewed by the City to be adverse to City's Regional Sanitary Sewer System.
- D. Any assignment by Developer executed in violation of this submittal, review and approval procedure is acknowledged by Developer to be void ab initio as to its effects upon the City of San Antonio, and the Developer will continue to be bound by the terms and conditions of this Contract.
- E. In the event that the City approves an assignment, the City will acknowledge same in writing within thirty days of receipt of the proposed assignment and at such time will further provide a written release to Developer relieving Developer in whole or in part from further responsibilities under this Contract as appropriately determined by an interpretation of the assignment document.

XI. SEVERABILITY

If for any reason, any one or more paragraphs of this Contract are held legally invalid, such judgment shall not prejudice, affect, impair or invalidate the remaining paragraphs of the Contract or the Contract as a whole, but shall be confined to the specific sections, sentences, clauses or paragraphs of this Contract held legally invalid.

XII. TERM OF CONTRACT

The provisions of this Contract shall remain in full force and effect until either the City of San Antonio formally adopts a new comprehensive policy for supplying sanitary sewer service to the Upper Salado Watershed, or ten (10) years from the effective date of this Contract has elapsed, whichever occurs first. In the event the first occurrence is the formal adoption by the City of a new comprehensive policy for supplying sanitary sewer service to the Upper Salado Watershed, the parties hereby agree to amend any provisions of this Contract which may be in conflict with such new comprehensive policies, and to negotiate the number of years that the ammended Contract shall be in effect. In the event ten (10) years elapse from the effective date of this Contract, and a new policy for supplying sanitary sewer service to the Upper Salado Watershed has not been formally adopted by the City of San Antonio, the parties hereby agree to the following:

- A. The City will continue to (i) accept project wastewater flows for transportation and treatment; (ii) recognize the Developer's right to connect to the City's regional wastewater system to the extent of the remaining unused project capacity; and (iii) exercise the credit procedures set forth herein until all eligible costs are recouped by the Developer, if the Director is satisfied with the Developer's performance record in complying with the provisions of this Contract. If the City is dissatisfied with the Developer's performance record under this Contract it shall notify the Developer of such dissatisfaction on or before the termination date of the Contract. However, if the City is dissatisfied with the Developer's performance, it shall give the Developer at least thirty (30) days to cure such defect in performance.
- B. The parties agree to review the provisions of this Contract for possible amendment and re-execution for a term to be negotiated and agreed to by the Parties.

XIII. NOTICES

Any notice, request, demand, report, certificate or other instrument which may be required or permitted to be furnished to or served upon the parties shall be deemed sufficiently given or furnished or served if in writing and deposited in the United States mail, registered or certified, return receipt requested, addressed to such party at the address set forth below:

IF TO CITY:

CITY OF SAN ANTONIO
POST OFFICE BOX 9066
SAN ANTONIO, TEXAS 78285
ATTN: MR. JOE A. ACEVES
DIRECTOR OF THE DEPARTMENT
OF WASTEWATER MANAGEMENT

IF TO DEVELOPER:

or such other address or addresses of which either party may notify the other party. Without affecting the validity of the service of any notice, request, demand, report, certificate or other instruments, copies thereof intended for the parties shall be sent to their respective counsel as follows:

IF TO CITY:

CITY OF SAN ANTONIO
POST OFFICE BOX 9066
SAN ANTONIO, TEXAS 78285
ATTN: MR. LOWELL F. DENTON
CITY ATTORNEY

IF TO DEVELOPER:

or such other counsel as may be hereafter designated either party from time to time, by written notice to the other party.

INCORPORATION OF DOCUMENTS AND ATTACHMENTS XIV.

All documents and other materials that are either attached hereto, or referenced therein, are incorporated into this Agreement as an inseparable part hereof, by such reference thereto, and this Agreement shall be constructed to include all of any such attached or referenced documents and other materials unless the contrary shall have been provided herein.

IN WITNESS OF WHICH THIS AGREEMENT HAS BEEN EXECUTED IN DUPLICATE ON the 18th day of Monther 1985.

y as was as	CITY OF SAN ANTONIO
ATTEST: John S. Ardingus	ACITY MANAGER
	By: Mindy Manager
Title:	* "

CORPORATE ACKNOWLEDGEMENT

THE STATE OF TEXAS

COUNTY OF BEXAR

personally appeared , known to me to be the person and officer whose name is subscribed to the foregoing instrument and acknowledged to me that the same was the act of the said the act of such corporation, and that he has executed the same as the act of such corporation for the purposes and consideration therein expressed and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL of Office, this ______day of _______, 1985.

Notary Public, State of Texas

My Commission Expires: 3/7/77



February 22, 2001

Mr. Edward Guzman Planner II City of San Antonio Planning Department P. O. Box 839966 San Antonio, TX 78283-3966

Re:

Concord Park, Unit-1 Plat No. 000560

Dear Mr. Guzman:

RECEIVED F OI FEB 22 PM 3: 49 DEPT. OF PLANNING LAND DEVELOPMENT

This transmittal is a follow up to our conversation this morning related to the Concord Park, Unit-2 Subdivision plat and revised POADP. Transmitted are the following documents:

- A Section of the Commons at Concord Park Pro Comm Construction start lease provisions, which states that the tenant may terminate their lease if the proposed building slab is not poured by April 1, 2001 for any reason. The project would be killed if this were to occur.
- Copy of the POADP Application
- POADP revision fee of \$257.50
- Copy of the previously approved TIA used during the rezoning of the property
- Eight copies of the revised Preliminary Overall Area Development Plan

We will follow up with submittals to Debbie Reid, NEISD and SAWS Aquifer Studies office tomorrow morning.

We are seeking your assistance to keep the Concord Park, Unit-2 Subdivision Plat (Plat No. 00560) on the February 28, 2001 Planning Commission Agenda.

If you have any questions or require additional information, please contact me.

Sincerely,

Pape-Dawson Engineers, Inc.

Brice Moczygemba,

Vice President

4871\00\Word\Letters\010222a1.doc

PAPE-DAWSON ENGINEERS, INC.

San Antonio, Texas 78216

Phone: 210.375.9000 Fax: 210.375.9010 info@pape-dawson.com

CITI OF SAN ANTONIO P.O. BOX 839975 SAN ANTONIO, TX 78283-3975 2111475

AMT ENCLOSED

AMOUNT DUE INVOICE DATE DUE DATE

257.50 2/23/2001 2/23/2001

50-04-5573 PAPE DAWSON ENGINEERS 555 E. RAMSEY S.A. TX. 78216

PHONE: 000 - 0000

POADP #698

VILLAGE OF SONTERRA

FACILITY LOCATION: 100 COMMERCE ST W

INVOICE DATE INVOICE ACCOUNT DUE DATE OFFICE HOURS 2/23/2001 2111475 50-04-5573 2/23/2001 7:45 - 4:30 INVOICE DATE

LINE INDEX REF DESCRIPTION 1 012542-001 PLAN REVIEW FEES

AMOUNT 257.50

AGREEMENT DATES SERVICE DATES ORDINANCE CONTRACT DOCUMENT ST: 02/22/2001 CK#032354 DOCUMENT POADP #698 POADP #698 END 02/22/2001 PREVIOUS BAL CURRENT CHARGES NEW BALANCE TOTAL AMT DUE 0.00 257.50 257.50

CITY OF SAN ANTONIO PLANNING-FOURTH FLOOR P.O. BOX 839975 SAN ANTONIO, TX 78283-3975 PAGE 1 OF 1

PLAT NBR: 1994000762	PLAT NAME: CONCO	ORD PARK	
POADP NBR: PO	DADP NAME:		
APPLICATION DATE: 9_ 7 TYPE (REPLAT, VACATE,		EXPIRATION DATE DEFERRED (Y/N):	8_ 13 2000 _
MAJOR/MINOR(1,2): 1			
X/Y COORDINATES: X: 1ST SET REQUIRED) X:			
LOC DESC:			:
CURRENT PLAT STATUS:	STATUS DATE:	PLAT ACT	VE ?(Y/N): Y

CMD: 220 PLAT: 199400076	52 NAME/KEY:	AGENCY: PW
PLAT NBR: 1994000762 PL	LAT NAME: CONCORD PARK	
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	SPACE: N OVER OR ADJACENT TO ONE: Y WITHIN FLOOD PLAIN:	
WATER SERVICE: SZ	SAWS SEWER SERVICE:	SAWS
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'PF7' BKWD 'PF8' FRWD 'PF3' MENU

CMD: 260 PLAT: 1994000762	NAME/KEY:	AGENCY: PW
PLAT NBR: 1994000762 PLAT	NAME: CONCORD PARK	
APPLICATION DATE: REPLAT PUBLIC HEARING DATE: DEFERRAL APPROVAL DATE: NOTIFICATION DATES:	9 7 1994 EXPIRATION DATE: REPLAT EXPIRATION: DEFRL NOTEC DATE: DEFRL EXP DATE:	
FILING DATE: PC DATE: DIRECTOR DATE: POSTPONEMENT/WITHDRAWAL: COUNTY STATUS (A/D/P):	2_ 24 1999 FILING EXPIRATION: 3_ 10 1999 APPROVED(Y/N): APPROVAL EXPIRATIO TIME EXT EXPIRATIO DATE TIME EXT GRAN	Y ON: 3_ 9_ 2002 ON:
RECORDATION DATE: 9_ 3_ 1999 PC NOTES: FEES EXPIRED 9-6-9 8-13-98 ELI 1 OF 4 OF 7 9544/144 5 147_	6 FILE DEACTIVATED 10-16-96 PD 7 9544/141 2 OF 7 9544/142 3 OF OF 7 9544/146 7	. NEW FEES 7 9544/143
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TPLTM415 CERTIFICATIONS & REVIEWS SUMMARY

04/15/04

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'PF7' BKWD 'PF8' FRWD 'PF3' MENU 'PF4' COMPLETENESS 'PF5' TECHNICAL

CMD: 420 PLAT#: 1994000762 NAME/KEY:	AGENCY: PW
PLAT NBR: 1994000762 PLAT NAME: CONCORD PARK AGENCY: PW	==========
TEXT: RECEIVED STREET & DRAINAGE PLANS 8-12-98 RECEIVED TRAFFIC PLANS 8-12-98 STREET LIGHT CONTRACT \$ 130,092.00 RETURNED STREET & DRAINAGE PLANS TO ENGINEER 9-24-98 RECEIVED NEW STREET & DRAINAGE PLANS & CALCULATIONS 10-20 RECEIVED NEW DRAINAGE SHEETS 12-2-98 RECEIVED NEW STREET SHEET 12-7-98 RECEIVED NEW STREET & DRAINAGE PLANS 12-21-98 SENT PLANS TO INSPECTIONS 3-15-99 FILED PLANS IN "LL" FILE 3-15-99 RECEIVED REVISED STREET & DRAINAGE PLANS 4-28-99 SENT REVISED PLANS TO INSPECTIONS 5-4-99 FILED REVISED PLANS IN "LL" FILE 5-4-99	0-98

'PF7' BKWD 'PF8' FRWD 'PF3' MENU

CMD: 420 PLAT#: 1994000762 NAME/KEY:	AGENCY: PW
PLAT NBR: 1994000762 PLAT NAME: CONCORD PARK AGENCY: PW	
TEXT: RECEIVED STREET LIGHT FEE \$147,817.50 9-2-99 RECEIVED STREET MARKER FEE \$499.00 9-2-99 RECEIVED NEW STREET & DRAINAGE PLANS 8-16-99 SENT NEW PLANS TO INSPECTIONS 8-17-99 FILED NEW PLANS IN "LL" FILE 8-17-99 LINEN 9-8-99	

'PF7' BKWD 'PF8' FRWD 'PF3' MENU

CMD: 260 PLAT: 1994000762	NAME/KEY: AG	GENCY:	SAWS
PLAT NBR: 1994000762 PLAT	NAME: CONCORD PARK	=====	=======
APPLICATION DATE:	9 7 1994 EXPIRATION DATE:	8	13 2000
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DIRECTOR DATE:	APPROVAL EXPIRATION:	3_	9_ 2002
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4 OF 7 9544/144 5	OF 7 9544/145 6 OF 7 9544/146 7 OF	7 954	14/
147			
	PF3' MENU		

PAPE-DAWSON ENGINEERS, INC.

555 East Ramsey San Antonio, Texas 78216



FEBRUARY 22, 2001

032354

CENTS

\$****\$257.50*

PAPE-DAWSON CONSULTING ENGINEERS, INC.

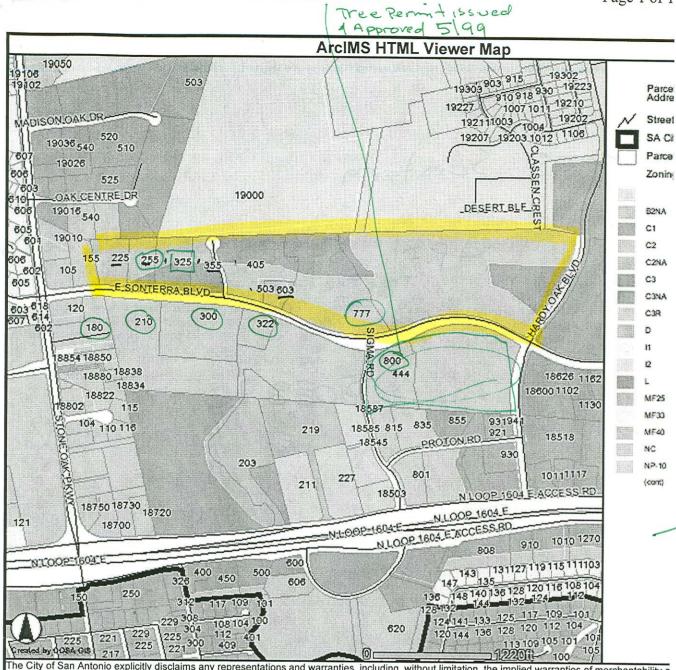
TO THE

ORDER OF

CITY OF SAN ANTONIO

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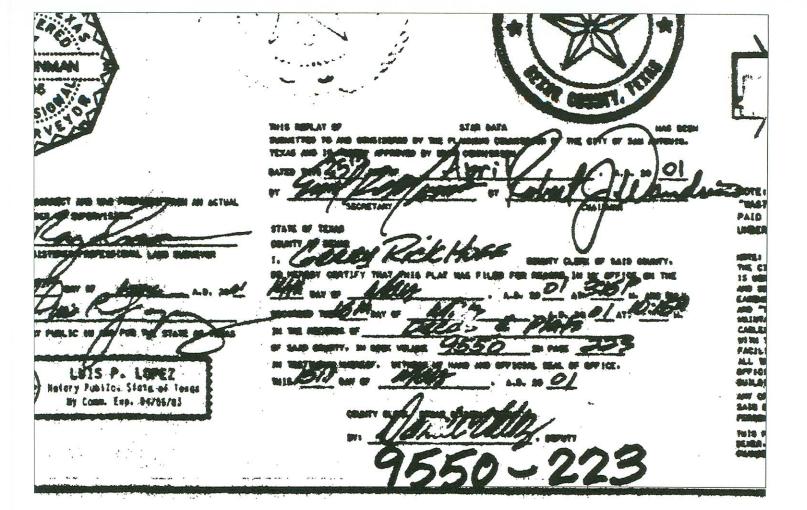
The City of San Antonio explicitly disclaims any representations and warranties, including, without limitation, the implied warranties of merchantability a purpose. The City shall assume no liability for any errors, omissions, lack of timeliness or inaccuracies. The City shall assume no liability for any decision taken by the user in reliance upon any information or data furnished.

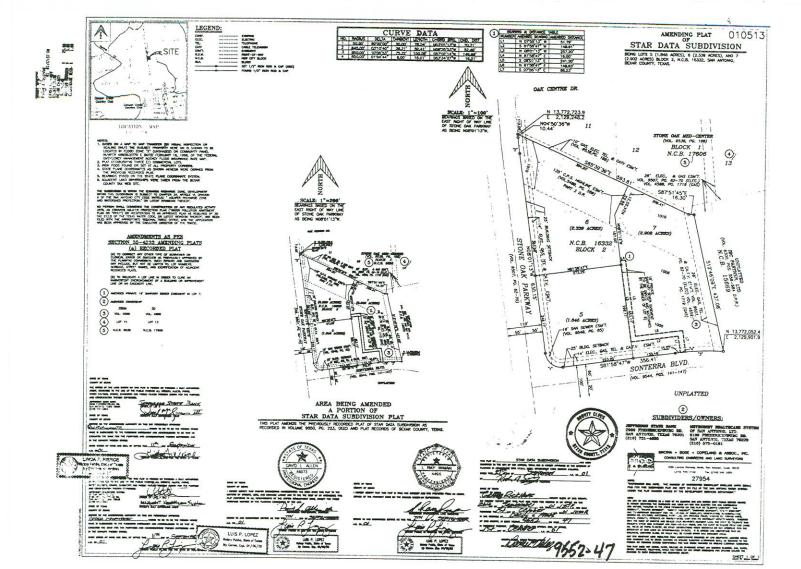
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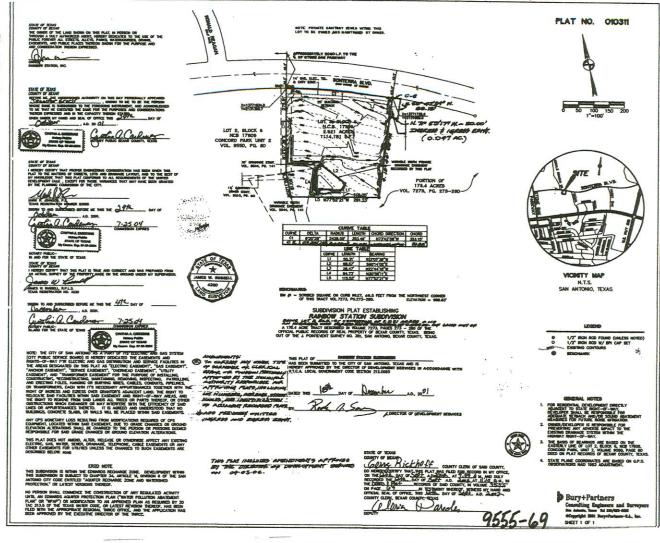
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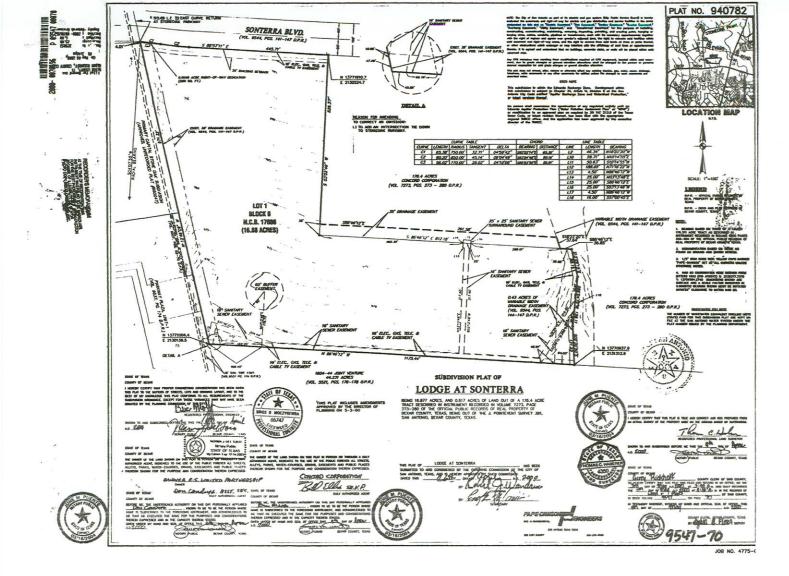
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ON PAGE 19 INTESTIMONY WHEREOF, WITNESS MY HAND AND

OFFICIAL SEAL OF OFFICE, THIS 15 TH. DAY OF SAIT AD. 2022

COUNTY CLERK, BEXAR COUNTY, TEXAS

DEPUTY



NOTARY PUBLIC

BEXAR COUNTY, TEXAS

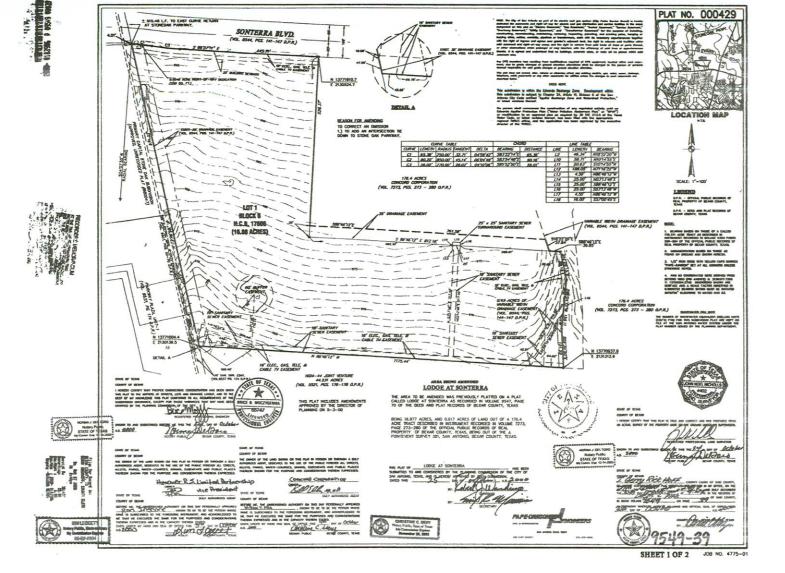
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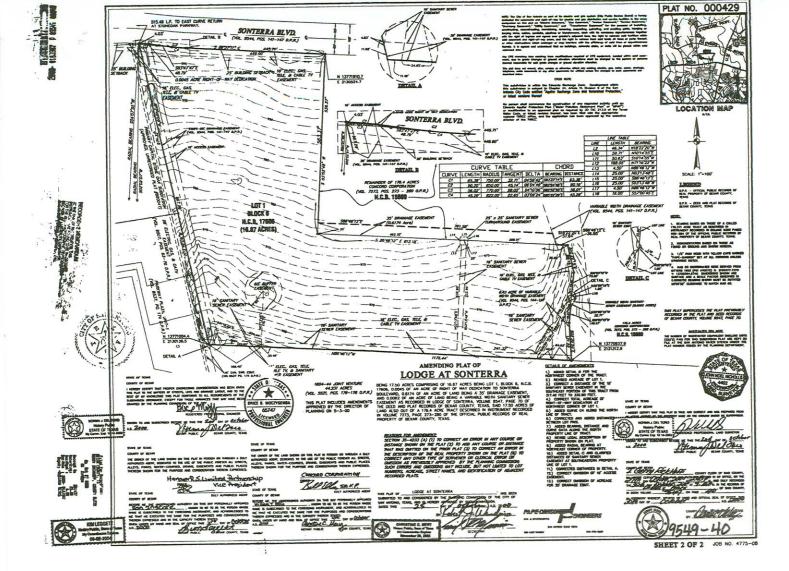
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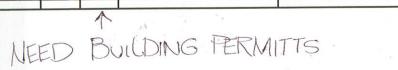
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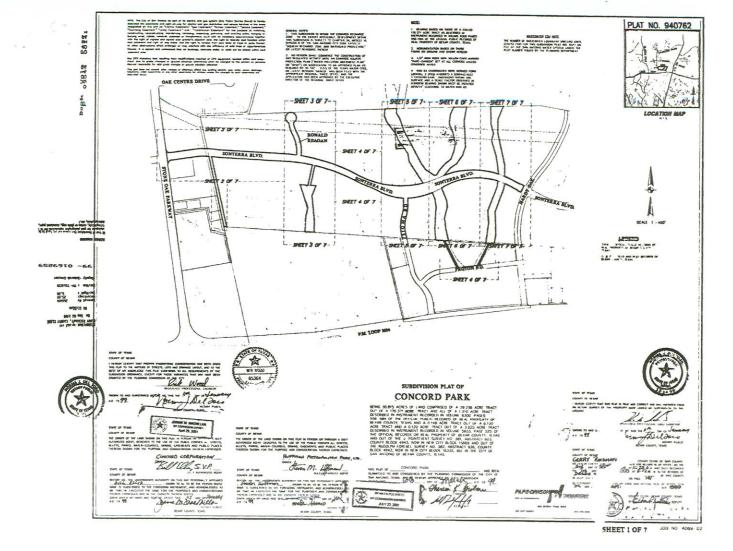
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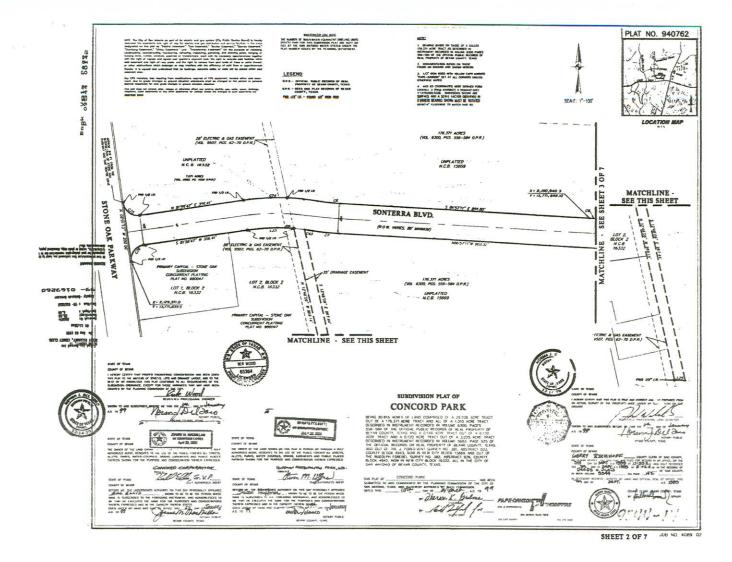
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MDP/ POADP#	P.U.D. REF. #	PLAT NO.#	MDP/ POADP/ PLAT NAME	PUD Name	MDP / POADP PUD Date Accepted	MDP / POADP Exp. Date	PLAT APPR. DATE by Planning Comm.	ENGINEER/ DEVELOPER	City limits	Aquifer	Acres	MDP / POADP/ PUD Landuse	PUD Gated?	STREET PUBLIC OR PRIVATE?	No. # LOTS IN PLAN	LIN/FT. STREETS IN PLAN
434			The Villages of Sonterra,		1/20/1995	7/21/1996		Pape Dawson	yes	yes	117.00	res/comm				
454			(Purge 3-8-00)													
			()	RECORDED												
			See POADP # 698	1304.01.404.4												_
	-	940762	Villages of Sonterra U-9, the	vol 9544 Page 141			3/10/1999									_
		940763	Villages of Sonterra U-1, the	" NOT RECORDED			6/26/1996									_
		940772	Villages of Sonterra U-2 PUD, the													_
		940773	Villages of Sonterra U-3 PUD, the													_
		940775	Villages of Sonterra U-4 PUD, the													
_		940776	Villages of Sonterra U-5 PUD, the											_		_
		940778	Villages of Sonterra U-6 PUD, the													
		940779	Villages of Sonterra U-7 PUD, the			~ 1	Permete							_		
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		940781	Villages of Sonterra U-10, the	401 9544 Page 157	200-1 Tokey	CASUL	DIKELLER		-							_
		940782	Villages of Sonterra U-11, the	4547 70	1 0	17/1/2	41.26/2000		-							_
-		940783	Villages of Sonterra U-12, the				1 /		-							_
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		940762	Concord Park	vel 9544 Page 141			3/10/1999		-			-	_	-		
		010421	Sonterra Medical Park	4552 48	-/		10/10/2001							_		
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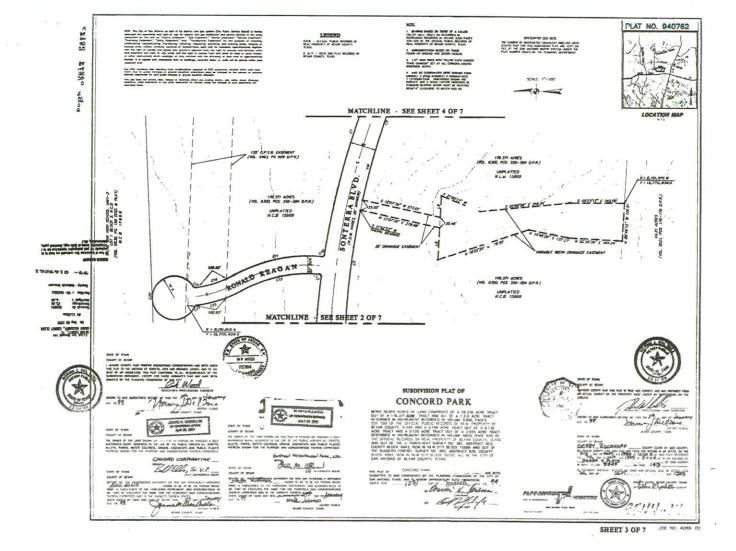


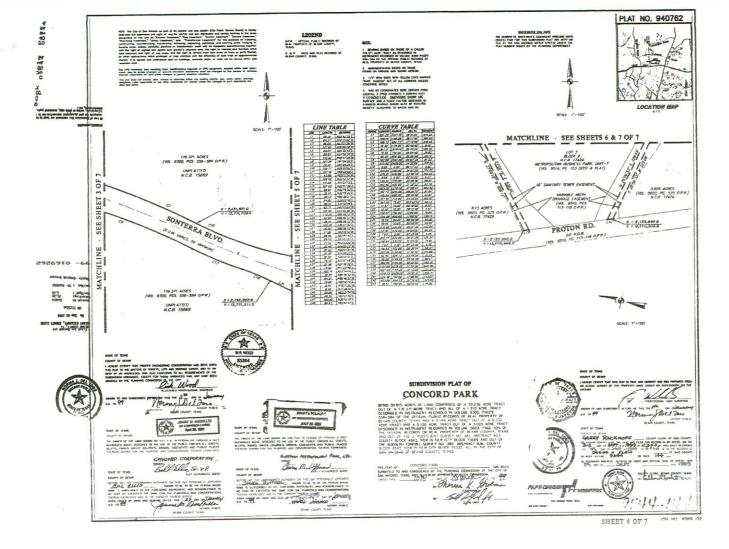
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698			Villages of Sonterra	RECORDED	2/28/2001	8/24/2002	yes	Pape-Dawson	yes	yes			
0,0			Concord Park					Pape-Dawson	yes	yes	14.41		_
		000560	Concord Park Unit 2	VOL 9550 Page 80			2/28/2001						_
		020439	Condord Park Unit 3	9558 4			4/23/2003					-	-
698-A			Villages of Sonterra (PURGRED BY Engineer Letter Dated March 17, 2003)		1/9/2003	7/10/2004		Pape-Dawson	yes	yes	177.7	res/comm	

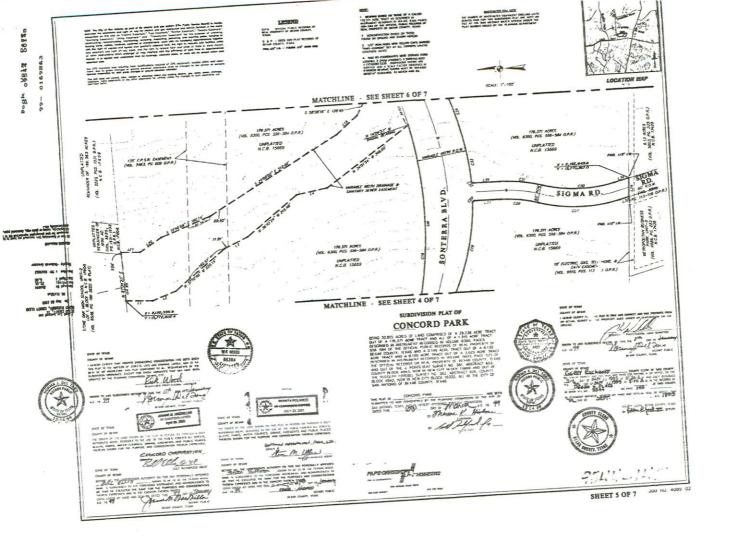
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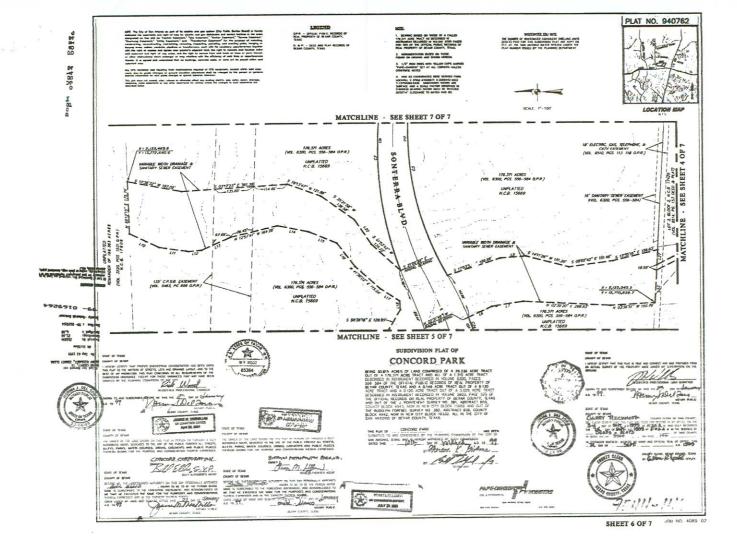


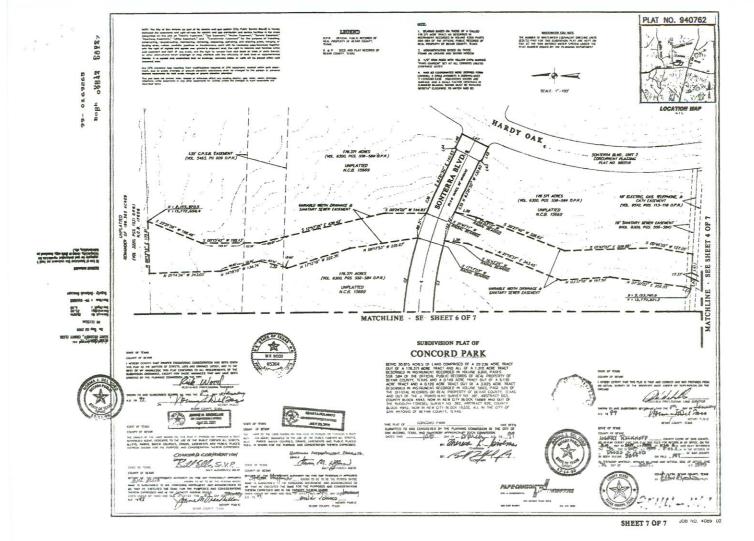


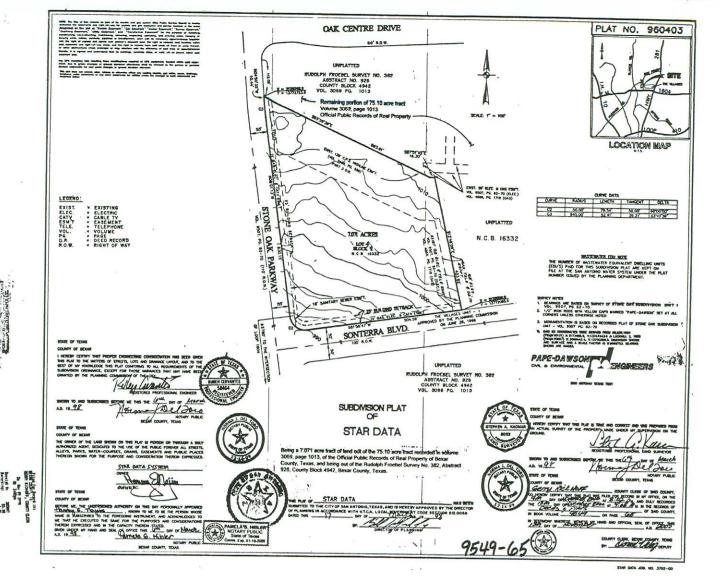






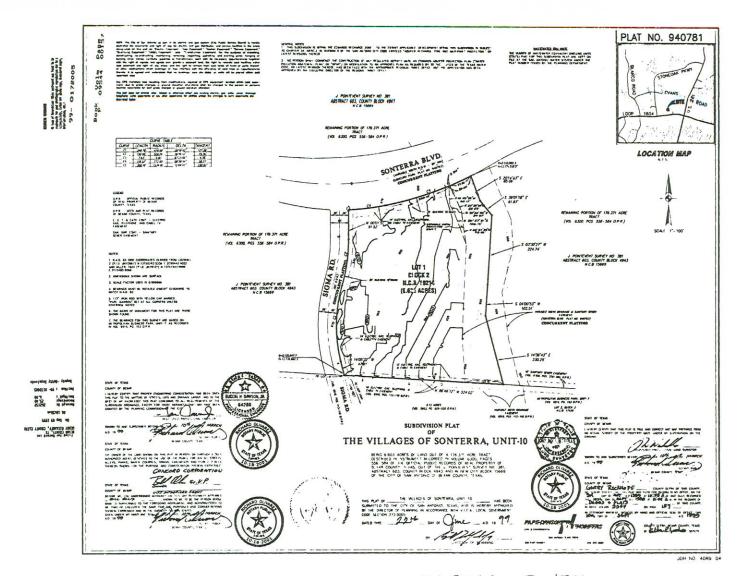




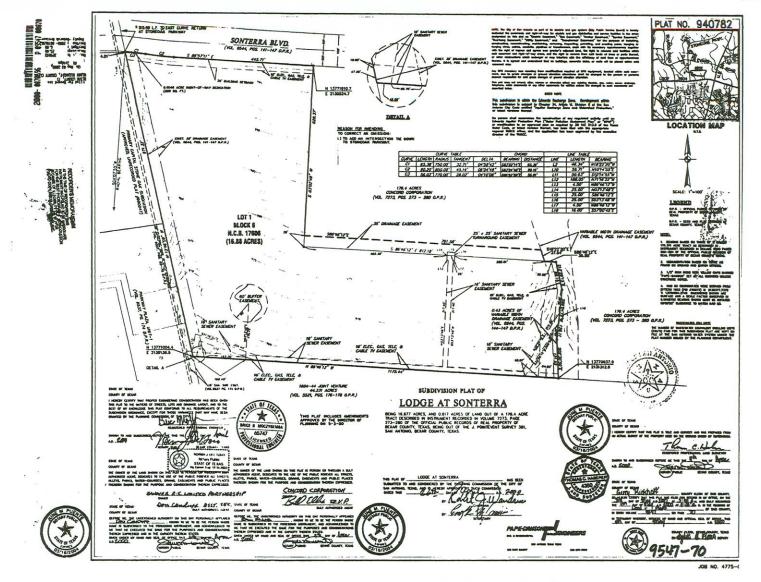


711

CML & EMMRONMENTAL . ENGINEERS UNPLATTED RUDOLPH FROEBEL SURVEY NO. 382 ABSTRACT NO. 926 SAN ANTONIO TEXAS 7821 COUNTY BLOCK 4942 VOL. 3069 PG. 1013 ON PLAT STATE OF TEXAS COUNTY OF BEXAR HEREBY CERTIFY THAT THIS PLAT IS TRUE AND CONFECT AND WAS PREPARED PROM STEPHEN A. KACMAR AN ACTUAL SURVEY OF THE PROPERTY, MADE UNDER MY SUPERVISION ON THE DATA GROUND. 3032 LAND SURVEYOR e 75.10 acre tract recorded in volume SWORN TO AND SUBSCRIBED BEFORE FIRE THIS THE ecords of Real Property of Bexar olph Froebel Survey No. 382, Abstract Texas. STATE OF TEXAS COLINTY OF METER COUNTY CLERK OF SHED COUNTY. ERTIFY THAT THE PLAT WAS FILED FOR RECORD IN MY OFFICE, ON THE AY OF CONTROL OF AT 9.05 M. AND DULY RECORDED DAY OFFICE OF AT 9.05 M. IN THE RECORDS OF EXAS, AND IS HEREBY APPROVED BY THE DIRECTOR ON PAGE _ GB LOCAL SOVERNMENT CODE SECTION 212.0065 TIMONY WHEREOF WITNESS MY HAND AND OFFICIAL SEAL OF OFFICE THIS ZONG DAY OF STAR DATA JOB. NO. 3792-00

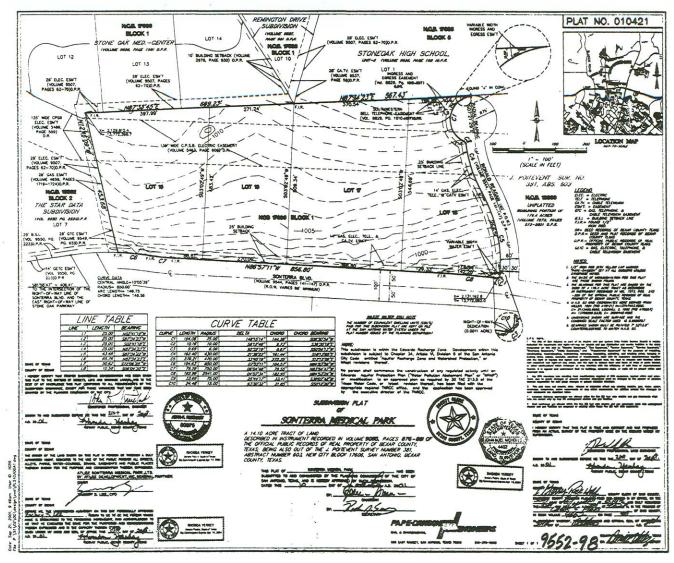


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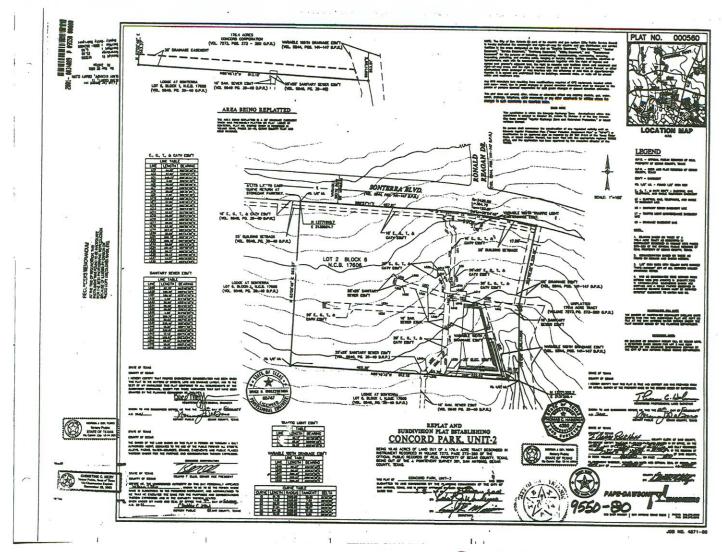


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vol. 9550, Pg. 80





Concord Park North Traffic Impact Analysis

Prepared for: Pape-Dawson Engineers 555 East Ramsey San Antonio, Texas 78216

Prepared by: Carter & Burgess, Inc. 1717 W. Sixth Street, Suite 210 Austin, Texas 78703

September 12, 1997



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CONCORD PARK NORTH TRAFFIC IMPACT ANALYSIS SEPTEMBER 11, 1997

SECTION ONE: INTRODUCTION

OVERVIEW

Concord Park North is a 152.04 acre development site in north San Antonio, Texas. This site consists of commercial, office, and retail land uses. The physical boundaries of the property are Stone Oak Parkway to the west and Gamma Drive to the east. This tract of land lies within the San Antonio City Limits.. Figure 1 depicts the location of the site and the study area. Figure 2 shows the proposed land uses within the property boundaries. Land uses along the boundary streets are depicted in Figure 3.

It is anticipated that the site will be fully developed by the year 2006. **Table 1** contains site development information.

Table 1: Site Development

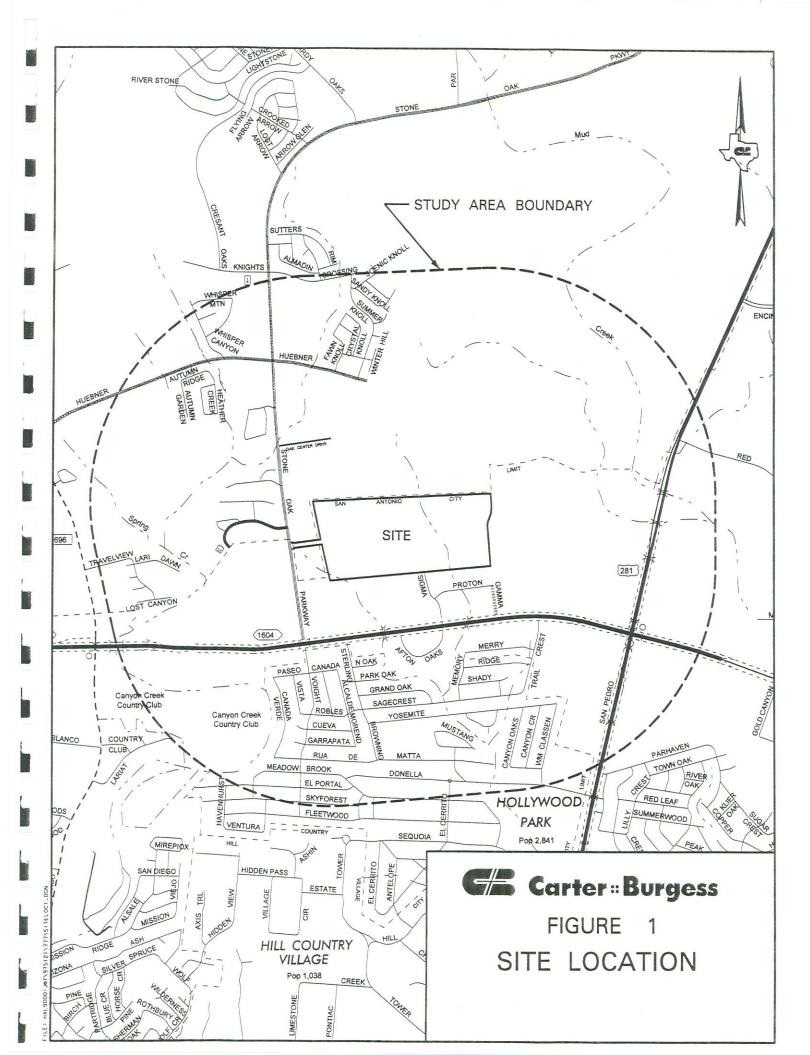
NUMBER OF SITES	LAND USE	TOTAL AREA
1	Shopping Center	126,325 SF
1	Office Park	310,366 SF
2	Apartment	574 DU
1	Speciality Retail	56,628 SF
6	General Office	707,941 SF
2	Warehouse	334,890 SF

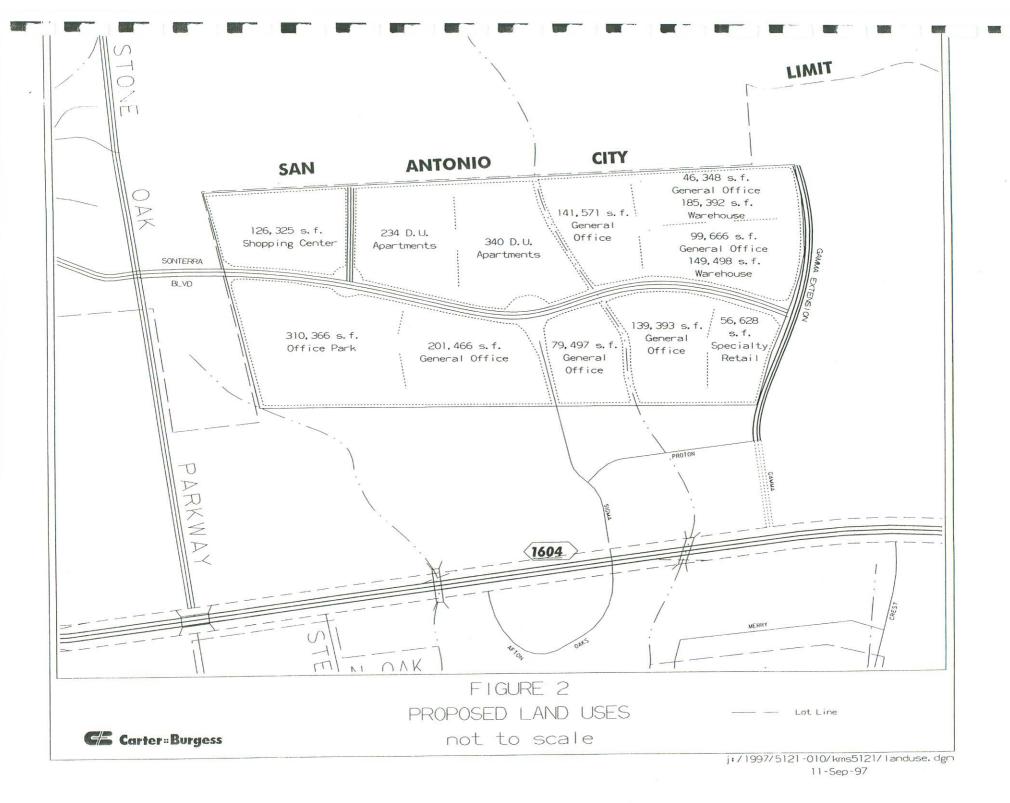
TRANSMITTAL

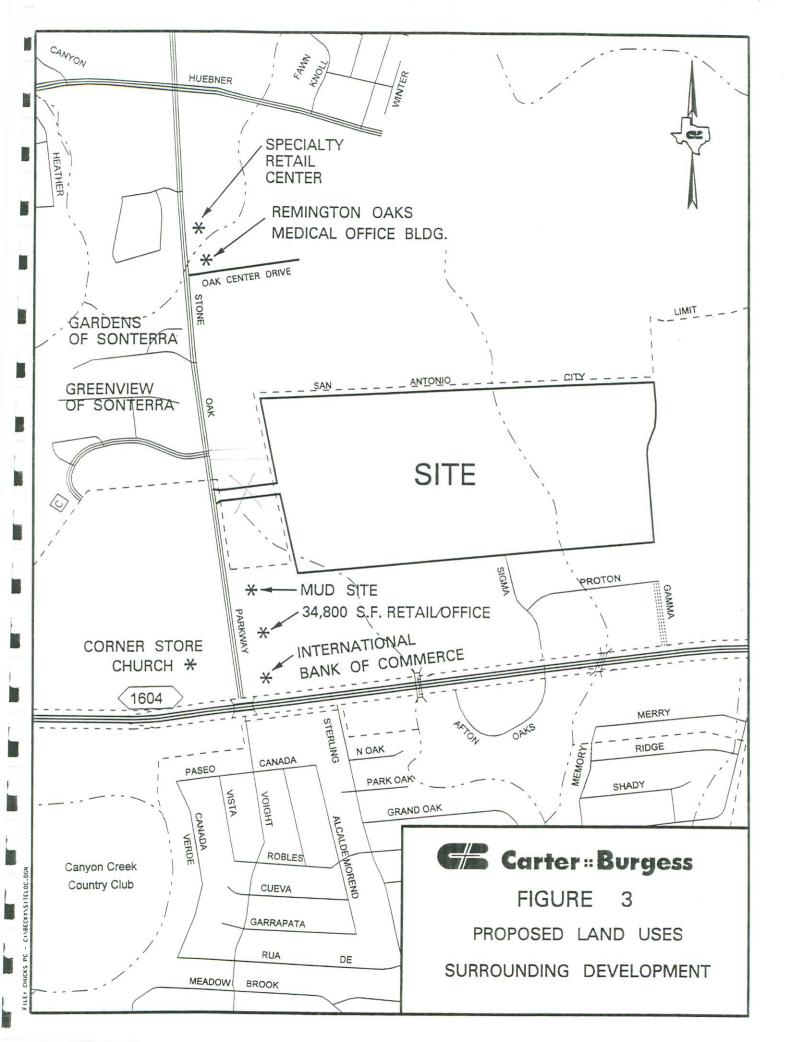


-	Tesse Hayes
	10/98
Re:	15 28/ & Jonlerna Blud. intenchange
QUANTITY	DESCRIPTION
1	TIA of Concord Park North development
1	TIA of Concord Park North development TIA of Ronald Reagan High School
-	
☐ For Appro	If enclosures are not as noted, kindly notify us at once. val ✓ For Your Use □ As Requested □ For Review and Comment
regard If y pleas	Per our telephone conversation ling traffic signal warrants. ou need additional information, e let me know.
From:	Brice Moczygemsa
cc:	Dryce MoczygemDa

PAPE-DAWSON ENGINEERS, INC.







STUDY METHODOLOGY

The following information provides a summary of the field data, technical analyses and conclusions related to this Traffic Impact Study. The methodology is based upon a through analysis of existing and projected site-generated traffic on area roadways. The study methodology is as follows:

- Review the City of San Antonio's Traffic Impact Analysis requirements, as 1 they pertain to this development, with City of San Antonio staff;
- Obtain 1997 AM and PM Peak hour manual turning movement counts at 2. the following intersections:
 - FM 1604 and Voight;
 - FM 1604 and Stone Oak Parkway;
 - Stone Oak Parkway and Sonterra Country Club Drive, and
 - Stone Oak Parkway and Heubner
- 3. Obtain the following 1997 24-hour tube counts:
 - Along Stone Oak Parkway at Sonterra Country Club, and
 - Along Heubner to the west of Stone Oak Parkway

Figure 4 shows the 24-hour counts that were collected.

- Using the turning movement counts that were obtained, evaluate existing 4. conditions at the following intersections:
 - FM 1604 and Voight:
 - FM 1604 and Stone Oak Parkway;
 - Stone Oak Parkway and Sonterra Country Club Drive, and
 - Stone Oak Parkway and Heubner
- Determine the growth rate for the background traffic using available 5. projections from the TRANPLAN travel demand model for the San Antonio region;
- Apply the calculated growth rate to the background traffic volumes 6. obtained from the existing intersection counts;
- Calculate trip generation for the AM and PM Peak traffic periods for the 7. Concord Park North site:

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FIGURE 4
EXISTING 24-HOURS
NON-DIRECTIONAL
COUNTS

- 8. Develop trip distribution percentages for Concord Park North for the buildout year of 2006. These percentages were determined by combining existing turning movement percentages with the typical trip attraction percentages for a development of this type. These percentages are shown in Figure 5.
- Distribute traffic generated by the Concord Park North site during the AM and PM Peak hours onto area roadways using the above noted trip distribution factors;
- 10. Analyze the following intersections using methodology found in the Transportation Research Board's *Highway Capacity Manual Special Report* 209, 1994 ed. (1):
 - FM 1604 and Voight;
 - FM 1604 and Stone Oak Parkway;
 - Stone Oak Parkway and Sonterra Country Club Drive, and
 - Stone Oak Parkway and Heubner
- 11. Formulate improvement recommendations, if required, for access to the site. Where possible, improvement recommendations are based on attaining level of service "D" or better.

FIGURE 5
TRIP DISTRIBUTION

AM
PM



: j:/1997/5121-010\KMS5121\amtrip.dgn

ROADWAY LEVEL OF SERVICE

The 1994 Highway Capacity Manual (1) uses Level of Service (LOS) as the method by which the quality of traffic flow is described. LOS describes operational conditions in six levels based upon speed and travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. These six levels are given the letters "A" through "F" and are given different descriptions and defining criteria depending on the roadway element analyzed. The roadway elements within the study area include arterial roadways, signalized intersections, and stop-controlled intersections.

Table 2 presents the criteria used to identify arterial roadway LOS. Arterial LOS is based on the average travel speed in miles per hour. Arterial LOS is further subdivided based on the classification of the arterial analyzed. Thus large arterials, with higher posted speed limits, are expected to have higher speeds and the LOS criteria are defined accordingly.

> Table 2 LOS Criteria for Roadway Arterial¹

	Arterial Classification						
		П	III				
Range of free-flow speeds (mph)	45 to 35	35 to 30	35 to 25				
Typical free-flow speeds (mph)	40	33	27				
Level of Service	Average Travel Speed (MPH)						
A	35	30	25				
В	28	24	19				
С	22	18	13				
D	17	14	9				
E	13	10	7				
F	<13	<10	<7				

LOS "A" represents free flow conditions. Drivers travel at desired speed and are virtually unaffected by other vehicles. With LOS "B", other vehicles in the traffic stream become noticeable. Under LOS "C", a driver's behavior becomes significantly affected by the traffic stream. LOS "D" represents high-density traffic flow where speed and maneuverability are severely restricted and poor levels of comfort and convenience are experienced. LOS "E" generally describes a traffic stream at



capacity where traffic is flowing but at a very slow rate, and any additional vehicles or unusual conditions will cause the system to break down. LOS "F" depicts a breakdown state where stop and go conditions and excessive queues form.

Signalized intersection LOS criteria, shown in **Table 3**, are based on the average number of seconds a vehicle is stopped at the intersection. Thus, if the average stopped delay for vehicles at an intersection is forty seconds or less, the intersection is defined as operating at a LOS "D" or better. Stopped delay of forty through sixty seconds represent LOS "E" and values greater than one minute define LOS "F".

For signalized intersection operation, LOS "A" represents very low delay; most vehicles do not stop at all. With LOS "B", more vehicles stop than LOS "A", increasing the average delay. Under LOS "C", the number of vehicles stopping is significant; however, many still pass through the intersection without stopping. LOS "D" describes conditions where congestion is readily apparent with many vehicles stopping and individual cycle failures (i.e., not all vehicles waiting in the intersection queue are able to get through the intersection on the first green indication) are noticeable. LOS "E" generally describes operations with poor progression, long cycle lengths and frequent cycle failures. LOS "F" describes unacceptable operations which include many cycle failures caused by arrival flows rates exceeding intersection capacity.

Table 3: LOS Criteria for Signalized Intersections (1)

Level of Service	Average Stopped Delay (sec/veh)
A	> 5
В	$>$ 5 and \leq 15
C	$>$ 15 and \leq 25
D	>25 and ≤ 40
E	>40 and ≤ 60
F	>60

Stop controlled intersections are analyzed in a similar manner; however, LOS is based on total delay per vehicle. The values that define LOS, shown in **Table 4**, are more restrictive than those for signalized intersections because it is assumed that drivers stopped at signalized intersections are able to relax while drivers waiting at stop signs must remain alert and continue to move ahead in the queue. Total delay includes both stopped delay and time spent in the queue waiting to enter the intersection. Two-way stop controlled intersections with the minor street average total delay greater than thirty seconds identifies LOS "E" or worse.



Level of Service	Average Total Delay (sec/veh)
A	≥ 5
В	$>$ 5 and \leq 10
С	$>10 \text{ and } \le 20$
D	$>$ 20 and \leq 30
E	$>$ 30 and \leq 45
F	>45

For this study, Level of Service (LOS) "D" is the criteria for minimum acceptable traffic conditions.

DOCUMENTATION OF ANALYSIS

A technical approach for simulating future travel demand was utilized in evaluating the roadway system in and around the Concord Park North site. Information used to develop the projection of future traffic for this area is documented in the following sections of the report. This information includes background traffic growth rates, traffic distribution, internal capture trips, pass-by trips, and transit trips.

BACKGROUND TRAFFIC

Existing conditions analysis is based upon the existing turning movement counts and mechanical counts recorded in April 1997 for "The Villages" Traffic Impact Study.

Background traffic for 2006 was calculated using the Texas Department of Transportation's TRANPLAN model ⁽²⁾. An annual growth rate was calculated by running an All or Nothing assignment for the year 2020 to Concord Park North. From this, the projected vehicle volumes using area roadways were determined. Comparing these 2020 projected volumes to the 1997 counted volumes, an average annual growth rate was determined. A growth rate of 3.5 % per year was calculated for Stone Oak Parkway traffic and 3.2 % per year for Heubner. This growth rate was then used to forecast intersection turning movements for the year 2006.

TRIP DISTRIBUTION

Trip distribution takes into account where vehicles entering and exiting the site are going to or coming from based on the roadway network. Distribution percentages were arrived at by analyzing the existing turning movement counts and the typical trip attraction percentages that are generated by a development of this type. The percentages shown in Figure 5 were applied to the site generated traffic for 2006.

INTERNAL CAPTURE TRIPS

Internal Capture Trips were developed from the methodology found in the *ITE Trip Generation Manual 5th Edition* ⁽²⁾. Internal capture trips are those trips that will interact among different uses within the site. To account for this interaction, a reduction may be applied to the trips generated by a particular land use. The information concerning internal capture reductions is addressed later in this report.



PASS-BY TRIPS

Pass-by trips rates are typically developed from the methodology found in the *ITE Trip Generation Manual*, 5th Edition (2). Pass-by reductions account for those drivers that are already in the vehicle stream and in route to another establishment. These drivers did not initially intend to visit the first establishment, but while passing by, decided to stop. This interaction with the adjacent traffic streams and the site allows for a reduction to the total trips generated by a particular land use. The pass-by reductions taken for land uses associated with this site are discussed later in this report.

TRANSIT TRIPS

San Antonio's transit agency, VIA, provides limited service to this area. Therefore, there were no reductions taken for transit usage.

AREA ROADWAY FACILITIES

STONE OAK PARKWAY

Stone Oak Parkway is currently a four-lane major divided arterial from FM 1604 to US 281. Within the study area, there are median breaks at the various entrances along the route from FM 1604 to Heubner. The southern portion of the roadway is within the City of San Antonio's City Limits.

HEUBNER

Heubner is currently a four-lane divided minor arterial from Blanco Road to approximately one (1) mile east of Stone Oak Parkway. There are various median breaks at the roadway intersections along Heubner. At the intersection with Stone Oak Parkway there are left turn bays on each of the approaches.

SONTERRA BOULEVARD

A portion of Sonterra Boulevard will be constructed within Concord Park North when the site is developed. Within the site it will be a four-lane divided minor arterial with 100 feet of right-of-way. The development schedule for the section of the roadway to the east of the site and connecting to US 281 is unknown at this time.

VOIGHT

Voight is currently a two lane undivided residential collector that extends to Stone Oak Parkway from within the City of Hollywood Park.

LOOP 1604

Loop 1604 is a major freeway facility that serves as the outer loop for the City of San Antonio. In the study area it is four lanes wide with a posted speed limit of 70 miles per hour.

US 281

US 281 is a highway facility that serves as a radial link between Loop 1604 and the downtown Central Business District (CBD). From Encino Rio to the CBD it is a controlled access freeway. North of Encino Rio it is a four lane divided highway with at grade access.

SECTION TWO: EXISTING, 1997, CONDITIONS

The current roadway network was studied to establish baseline conditions. This analysis determines the existing intersection Levels of Service and traffic flow in and around the study area. In addition, current intersection deficiencies can be discovered during this analysis.

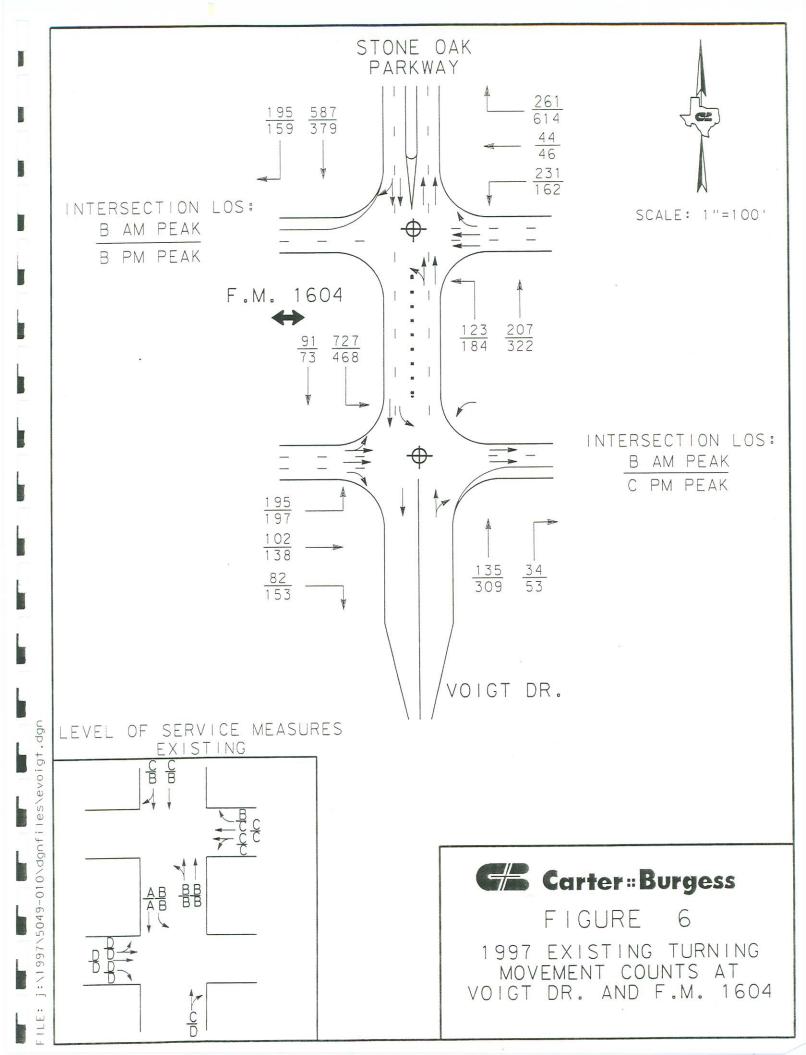
Peak hour turning movement counts were collected at the following intersection locations:

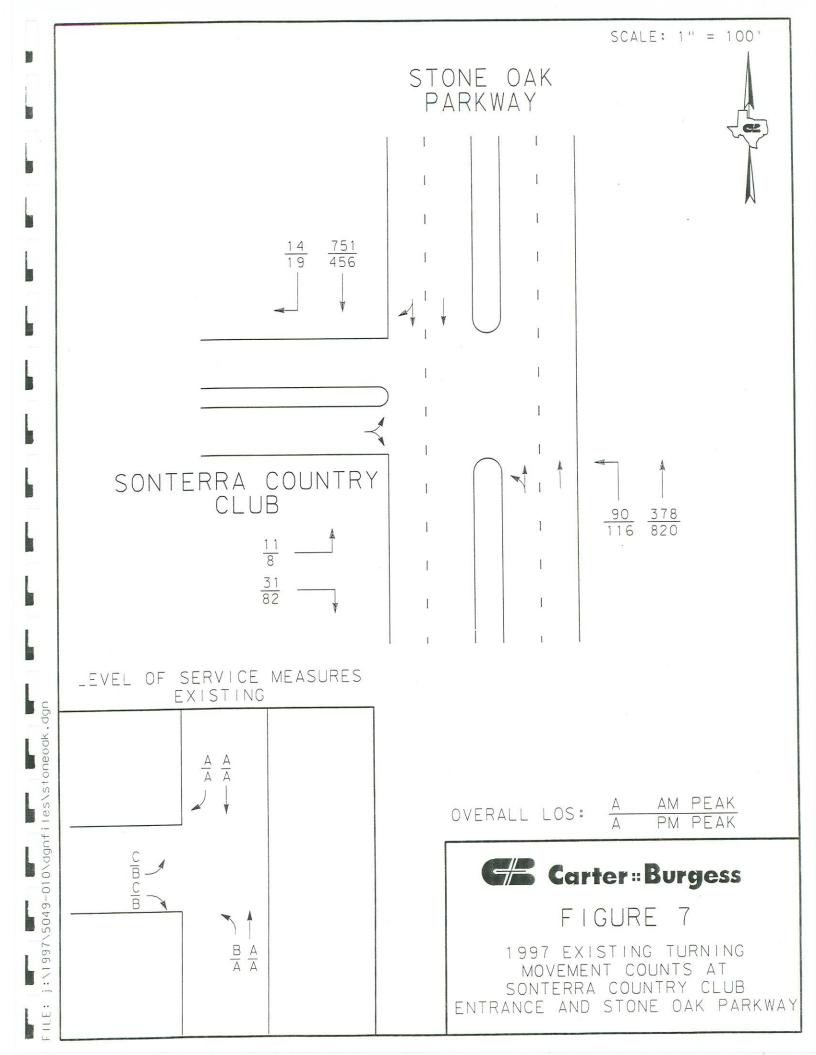
- FM 1604 and Voight;
- FM 1604 and Stone Oak Parkway;
- Stone Oak Parkway and Sonterra Country Club entrance, and
- Stone Oak Parkway and Heubner.

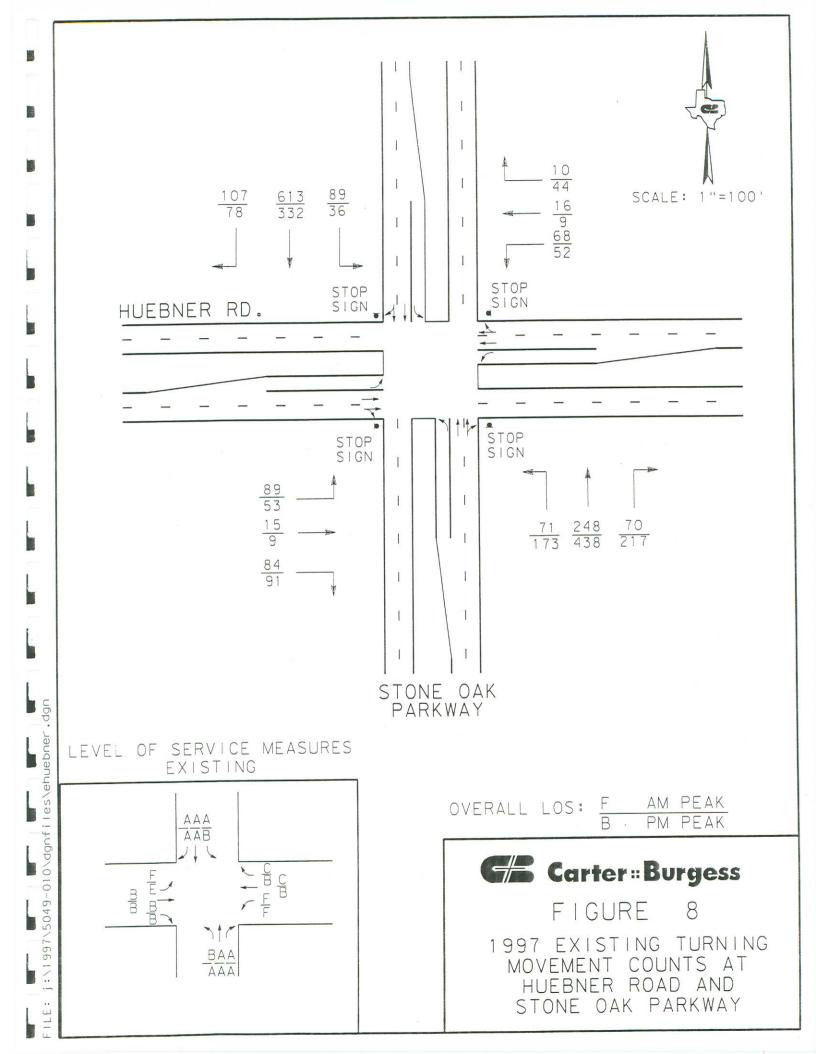
The intersection analyses performed for this study are based on the Highway Capacity Manual, Special Report, (HCM) (1), chapters nine (9) and ten (10). These two chapters discuss the methodology used to determine the Level of Service at signalized and unsignalized intersections, respectively. The Highway Capacity Software (HCS) version $2.3d^{(4)}$ is used to evaluate existing conditions. A summary of the analyses results are shown in Figures 6 through 8 and Table 5. Analyses worksheets are provided in Appendix A.

> Table 5 1997 Existing Levels of Service

	Type of	Level of Service				
Intersection	Intersection Control	AM Peak	PM Peak			
Loop 1604 and Voight (Figure 6)	Signalized	В	С			
Loop 1604 and Stone Oak Parkway (Figure 6)	Signalized	В	В			
Stone Oak Parkway and Sonterra Country Club (Figure 7)	Unsignalized	A	A			
Stone Oak Parkway and Heubner (Figure 8)	Unsignalized	F	В			







Unsignalized Intersections

There are two unsignalized intersections in the study area. These are Stone Oak Parkway at Heubner and Sonterra Country Club entrance.

The intersection of Stone Oak and Heubner operated at Level of Service "F" during the AM Peak under existing four-way stop traffic control. Review of the turning movement counts at this location shows that a predominant north - south traffic pattern during the AM and PM Peak demand periods. Forcing all of this traffic to stop causes unacceptable delays. For this reason, the intersection was re-analyzed as a two-way stop controlled intersection and it performed acceptably.

The Sonterra Country Club entrance has stop sign control at the intersection with Stone Oak Parkway. It operates at an acceptable Level of Service under existing conditions.

SIGNALIZED INTERSECTIONS

Only the two intersection at Loop 1604 are currently signalized within the study area. Both of these intersections currently operate at acceptable levels of service.



SECTION THREE: BUILDOUT YEAR -- 2006

BACKGROUND TRAFFIC

Background traffic volumes for 2006 were projected using the Texas Department of Transportation's TRANPLAN model (2). An annual growth rate was calculated by running an All or Nothing assignment for the year 2020 to Concord Park North. From this, the projected vehicle volumes using area roadways were determined. Comparing these 2020 projected volumes to the 1997 counted volumes, an average annual growth rate was determined. A growth rate of 3.5 % per year was calculated for Stone Oak Parkway traffic and 3.2 % per year for Heubner. This growth rate was then applied to the 1997 turning movement counts and the 2006 intersection turning movement volumes were projected.

TRIP GENERATION

Trip generation for Concord Park North was calculated from information contained in ITE's Trip Generation Manual, 5th edition (2). Proposed land uses and trips generated for this development are included in **Table 6: Trip Generation**.

INTERNAL CAPTURE REDUCTIONS

Internal capture reductions are calculated for sites that contain mixed use developments. Each land use has a specific trip generation that applies to a "stand alone" establishment where the driver arrives, goes to the site, and then leaves. If there are a variety of land uses within one site then a person is likely to visit more than one establishment. This is considered "trip chaining" and it accounts for a reduction in site generated traffic. Internal capture rates are applied as specified by the ITE Trip Generation Manual, 5th edition (2) and are included in Table 6.

PASS-BY REDUCTIONS

Pass-by reductions were taken for this development and are included in Table 6. These reductions are taken to account for those drivers that are already in the background traffic stream and decide to stop at another site before proceeding to their final destination. These drivers did not originally intend to go to the establishment but when passing by decided to stop.



CONCORD NORTH PARK

Trip Generation ITE Standard Method by Individual Uses SEPTEMBER 1, 1997 $[(1)-[(4)-(19)]-(7- .5^{\circ}(16) .5^{\circ}(16) (20)+(21) -(10))^{\circ}(1 -(10))^{\circ}(1 -(10))^{\circ}(1 -(11))^{\circ}(1 -($

Table 6: Trip Generation

				24	AM	PM	AM PEAK	PM PEAK	AM I	PEAK	PM I	EAK	A	DJUSTED		AD	JUSTEL)	AD	JUSTED)
ITE	ITE			HOUR	PEAK	PEAK	PASS-BY	PASS-BY	INT.	CAPT.	INT.	CAPT.	24 HO	UR VOLU	JMES	AN	A PEAK		PN	1 PEAK	
USE	DESCRIPTION	ι	INITS	TOTAL	TOTAL	TOTAL	REDUCT.	REDUCT.	IN	OUT	IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT

820	SHOPPING CENTER	126	KSF	8,179	186	762	0.0%	15.0%		10.0%	10.0%		7,980	3,990	3,990	167	105	62	582	291	29
750	OFFICE PARK	310	KSF	3,544	571	469	0.0%	0.0%	0.0%	0.0%	32.4%	28.6%	3,408	1,704	1,704	571	508	63	332	48	28
	APARTMENT	234	DU	1,475	118	140	0.0%	0.0%	0.0%	0.0%		0.0%	1,475	738	738	118	28	90	141	90	5
	GENERAL OFFICE	201.5	KSF	2,605	411	328	0.0%	0.0%	0.0%	0.0%		28.6%	2,509	1,255	1,255	411	366	45	232	38	19
	APARTMENT	340.0	DU	2,162	170	199	0.0%	0.0%	0.0%	0.0%			2,161	1,081	1,081	170	41	129	198	127	-
	GENERAL OFFICE	79.5	KSF	1,180	160	157	0.0%	0.0%	0.0%		32.4%		1,134	567	567	160	142	18	111	18	14
	GENERAL OFFICE	141.6	KSF	1,825	251	240	0.0%	0.0%	0.0%		32.4%		1,755	877	877	251	223	28	170	28	14
	GENERAL OFFICE	139.4	KSF	1,804	247	237	0.0%	0.0%	0.0%		32.4%		1,734	867	867	247	220	27			7
	SPECIALITY RETAIL	57	KSF	2,299	362	279	18.0%	18.0%	27.3%		27.3%		2,042	1,021	1,021	217	104	113	167	95	11
	GENERAL OFFICE	99.7	KSF	1,400	191	186	0.0%	0.0%	0.0%		32.4%		1,344	672	672	191	170	21	131		7
	WAREHOUSE	149.5		893	85	111	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	893	446	446		61	24	111	39	
	GENERAL OFFICE	46.3		785	106	106	0.0%	0.0%	0.0%	0.0%	32.4%	28.6%	754	377	377	106	94	12	75	12	6
	WAREHOUSE	185.4		1.025	150	165	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1,025	513	513	150	108	42	166	58	10
OTAL TRI		103.4	1.01	29,175	3,009	3,379							28,214	14,107	14,107	2,844	2,170	674	2,583	892	1,691



TRANSIT REDUCTIONS

No reductions were taken for transit services.

TRIP DISTRIBUTION

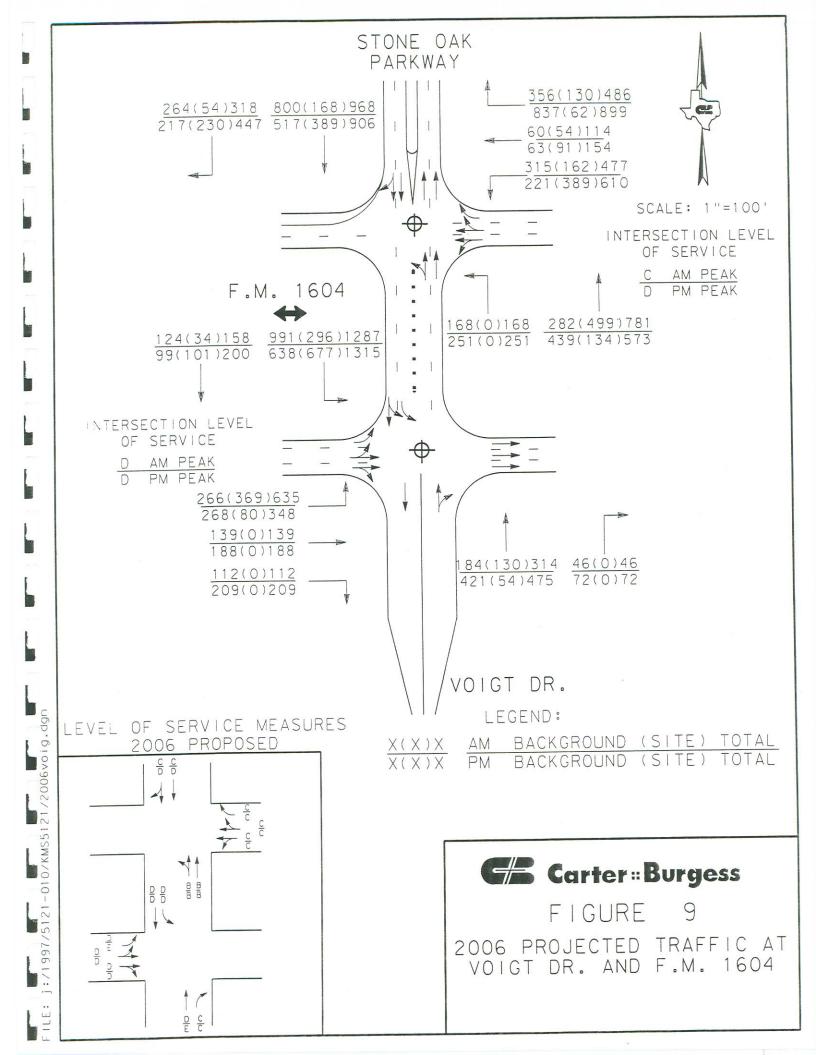
Trip distribution takes into account where the vehicles entering and exiting the site are going to or coming from based on the roadway network. Distribution percentages were arrived at by analyzing the existing turning movement counts and the typical trip attraction percentages that are generated by a development of this type. The percentages shown in Figure 5 were applied to the site generated traffic for 2006.

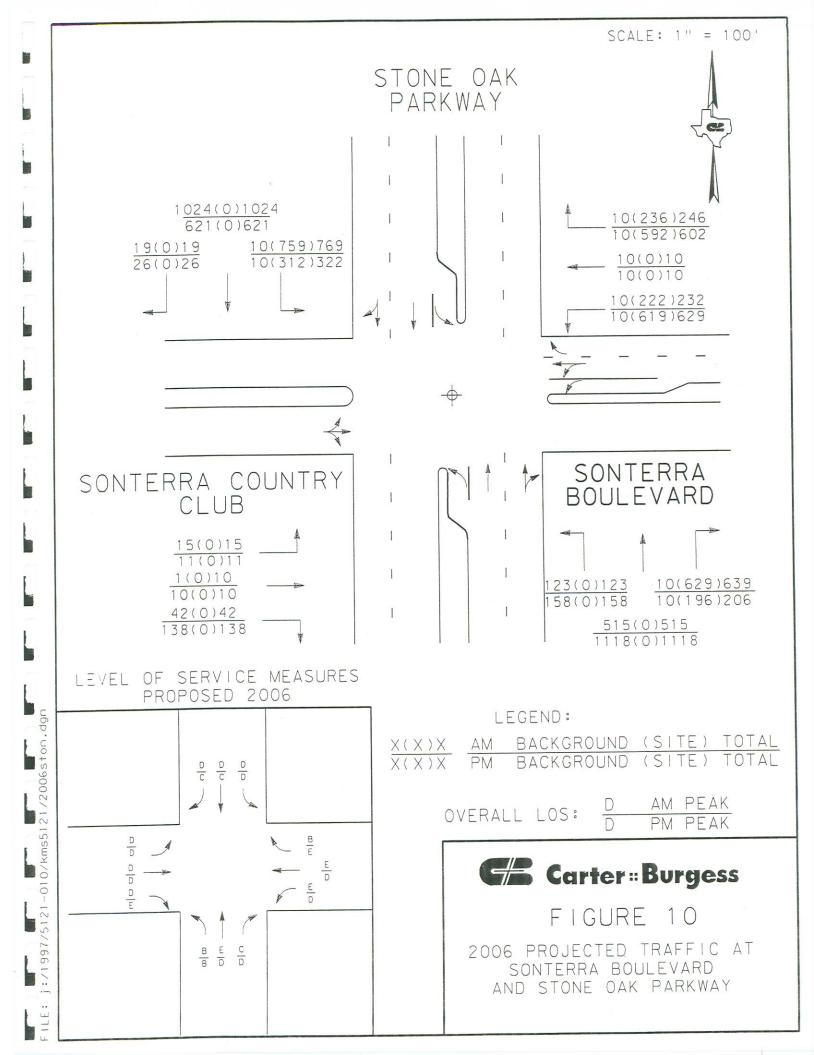
INTERSECTION ANALYSIS

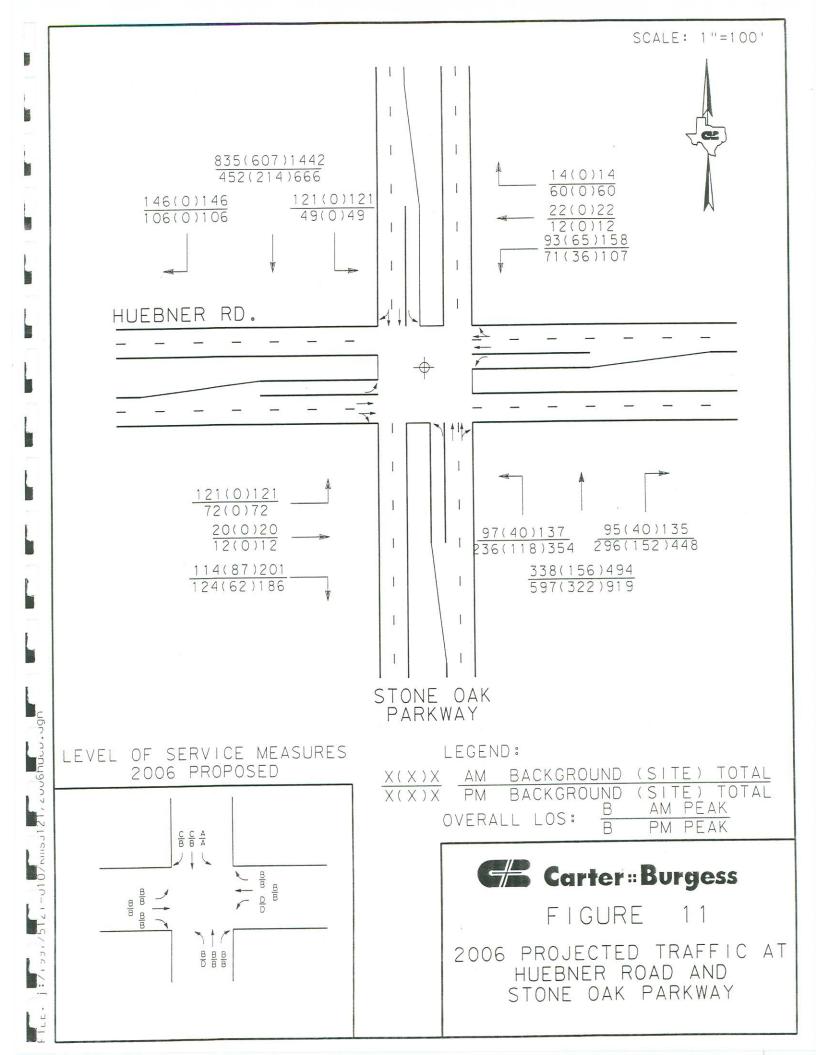
Site generated traffic was added to background traffic for the buildout year, 2006. Evaluation of the intersection analyses showed that most of the intersections would need minor geometric improvements through re-striping to accommodate projected traffic. Figures 9 through 13 depict these intersections with the required geometrics to obtain Level of Service "D" and Table 7 shows the resulting intersection Levels of Service. The intersections analysis worksheets are provided in Appendix A.

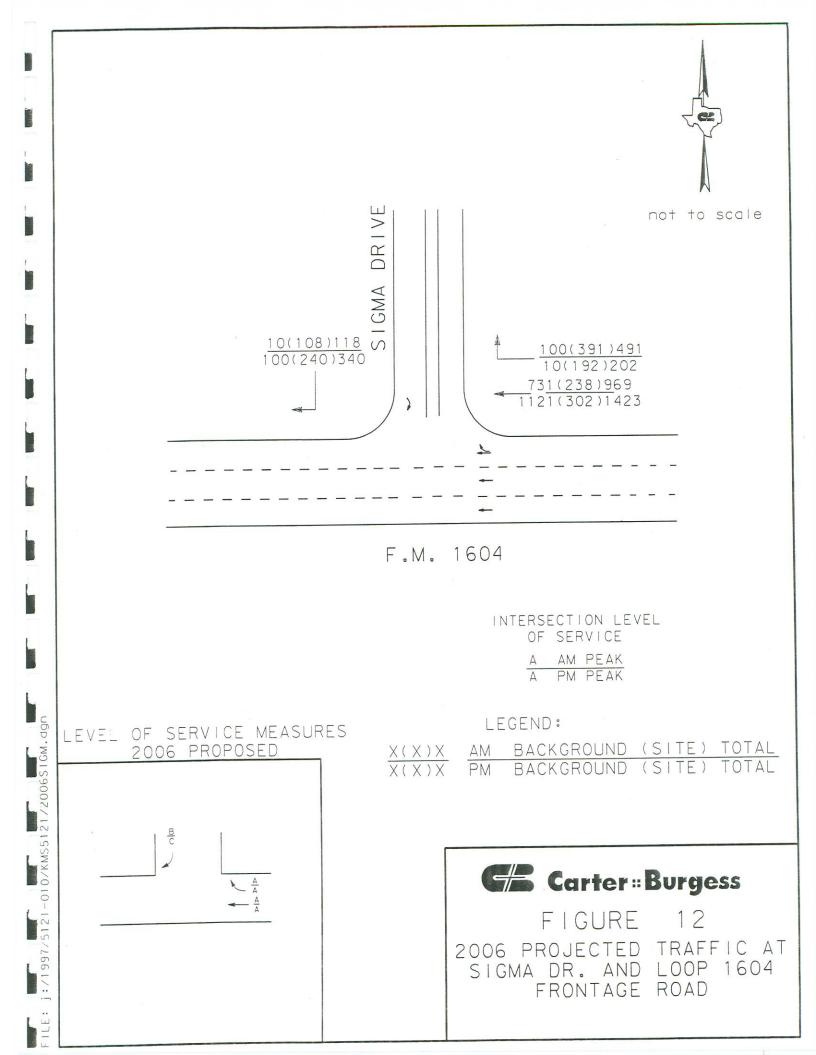
Table 7: 2008 Intersection Levels of Service

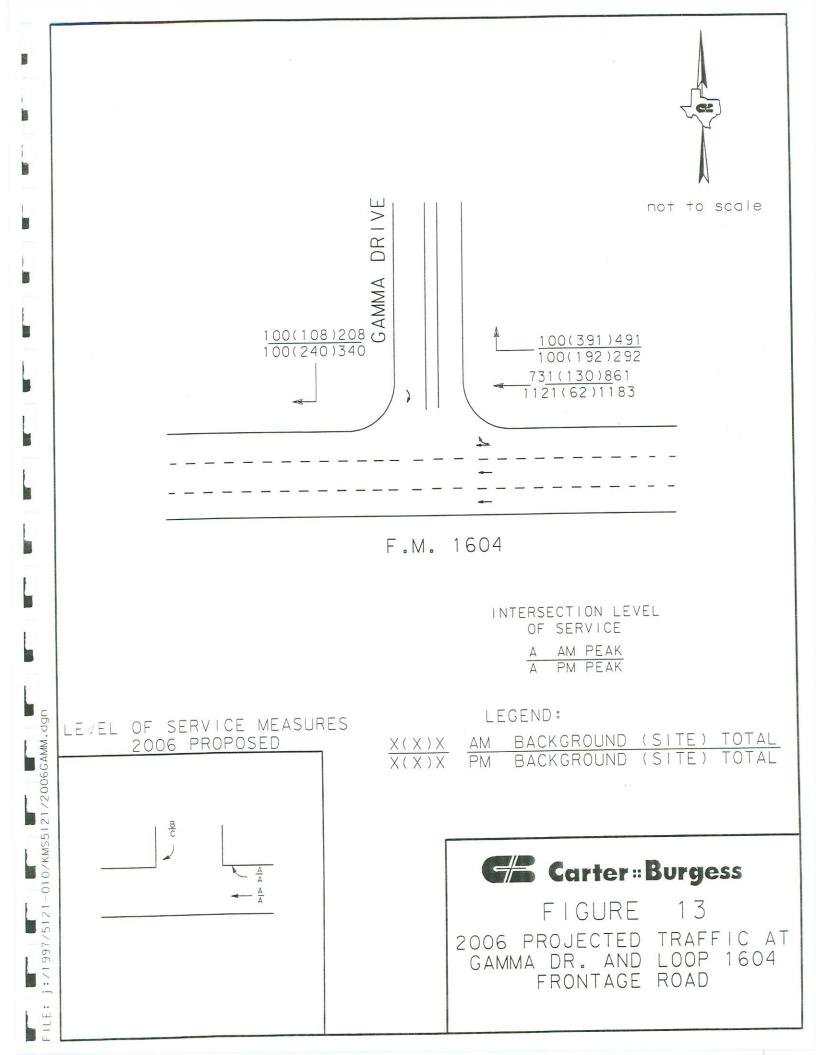
	Type of Signal	Level of Service			
Intersection	Control	AM Peak	PM Peak		
Loop 1604 EB Frontage Road and Voight (Figure 9) *1	Signalized	D	D		
Loop 1604 WB Frontage Road and Stone Oak Parkway (Figure 9) *2	Unsignalized	С	D		
Stone Oak Parkway and Sonterra Boulevard (Figure 10) *3	Unsignalized	D	D		
Stone Oak Parkway and Heubner (Figure 11) *4	Unsignalized	В	В		
Loop 1604 WB Frontage Road and Sigma Drive (Figure 12)	Unsignalized	A	A		
Loop 1604 WB Frontage Road and Gamma Drive (Figure 13)	Unsignalized	A	A		













Summary of Improvements

*1 Loop 1604 EB Frontage Road and Voight

Re-stripe the eastbound movements to include:

One (1) exclusive left turn lane

One (1) shared through left turn lane

One (1) shared through right turn lane

*2 Loop 1604 WB Frontage Road and Stone Oak Parkway

Re-stripe westbound movements to include:

One (1) shared through left turn lane

One (1) shared through right turn lane

One (1) exclusive right turn lane

*3 Stone Oak Parkway and Sonterra Boulevard

Construct Sonterra Boulevard with the following geometrics:

Westbound:

One (1) exclusive right tune lane

One (1) shared through left turn lane

One (1) exclusive left turn lane

*4 Stone Oak Parkway and Heubner

Install a signal at the intersection



SECTION FOUR: RECOMMENDATIONS

The Concord Park North site does not greatly impact any of the intersections analyzed. Only one intersection, Stone Oak Parkway and Sonterra Boulevard, will have a large percentage of Concord Park North site traffic utilizing it. However, the improvements needed can be made within the existing roadway or on the Concord Park North property. Most of the geometric improvement recommendations can be directly attributed to the expected growth in background traffic. Intersection improvements are outlined below.

LOOP 1604 AND VOIGHT

2006 (Proposed):

Improvements needed to the Eastbound approach. Currently this approach has one (1) shared left through lane, one (1) exclusive through lane and one (1) exclusive right turn lane. The approach needs to be re-striped to allow for one (1) exclusive left turn lane, one (1) shared left through lane and one (1) shared right through lane.

LOOP 1604 AND STONE OAK PARKWAY

2006 (Proposed):

Improvements needed to the Westbound approach. Currently this approach has one (1) exclusive right turn lane, one (1) exclusive through lane, and one (1) shared right through lane. The approach needs to be re-striped to allow for one (1) exclusive right turn lane, one (1) shared right through lane, and one (1) shared left through lane.

STONE OAK PARKWAY AND SONTERRA COUNTRY CLUB

2006 (Proposed):):

Improvements will be needed to all approaches except the eastbound approach (out of Sonterra Country Club). The westbound approach, Sonterra Boulevard, will be constructed at this time.

Northbound: Existing:

One (1) exclusive through lane

One (1) shared left through lane

Proposed:

One (1) exclusive left turn lane

One (1) exclusive through lane



Southbound: Existing: One (1) exclusive through lane

One (1) shared right through lane

Proposed: One (1) exclusive left turn lane

One (1) exclusive through lane

One (1) shared right through lane

Westbound: Construct this approach with the following geometrics:

One (1) exclusive left turn lane One (1) shared left through lane One (1) exclusive right turn lane

STONE OAK PARKWAY AND HEUBNER

2006 (Proposed):):

No geometric improvements will be needed at this intersection.

However, a signal will ne to be installed.

LOOP 1604 AND SIGMA DRIVE

2006 (Proposed):):

No geometric improvements will be needed to this

intersection.

LOOP 1604 AND GAMMA DRIVE

2006 (Proposed):):

No geometric improvements will be needed to this

intersection.



SECTION FIVE: CERTIFICATION STATEMENT

I hereby certify that this report complies with Chapter 19 of the City Code and with applicable technical requirements of the City of San Antonio and is complete to the best of my knowledge.

CARTER & BURGESS, INC.

Brian D. Van De Walle, P.E.

Senior Transportation Engineer



REFERENCES

- 1. <u>Highway Capacity Manual, (SR 209)</u>, Transportation Research Board, Washington D.C., 1994.
- 2. TRANPLAN Software, Texas Department of Transportation
- 3. <u>Trip Generation, An Informal Report.</u> 5th. Edition, Institute of Transportation Engineers, Washington D.C., January 1991.
- 4. "Highway Capacity Software", United Stated Department of Transportation, Federal Highway Administration, January 1

APPENDIX A

Streets: (E-W) FM 1604 Frontage Rd (N-S) Voigt
Analyst: RAB File Name: VOI-97-A.HC9

4-25-97 AM Peak Area Type: Other

Comment: 1997 Existing Counts

	Ea	Eastbound			Westbound			rthbou	 ind	Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes		> 2	1					1 /		1	1	
Volumes	195	102	82					135	34	727	91	
Lane W (ft)		12.0	12.0					12.0		12.0	12.0	
RTOR Vols		121	0						0			0
Lost Time	3.00	3.00	3.00					3.00	3.00	3.00	3.00	

			S	ignal	Opera	tion	S				
Pha	se Combinat	ion 1	2	3	4			5	6	7	8
EB	Left	*				NB	Left				
	Thru	*					Thru		*		
	Right	*					Right		*		
	Peds						Peds				
WB	Left					SB	Left	*	*		
	Thru						Thru	*	*		
	Right						Right				
	Peds						Peds				
NB	Right					EB	Right				
SB	Right					WB	Right				
Gre	en	20.0A				Gre	en 48	3.0A	37.0A		
Yel	low/AR	5.0					low/AR 5				
Сус	le Length:	120 secs	Phas	se con	mbinat:	ion	order: #	#1 #5	#6		

			Intersect	tion Perf	ormance	Summary		•	
	Lane	Group:	Adj Sat	V/C	g/C	-		Approac	ch:
	Mvmts	Cap	Flow	Ratio	Ratio	Delay	LOS	Delay	LOS
EB	LT	661	3607	0.496	0.183	28.9	D	28.6	D
	R	290	1583	0.296	0.183	27.5	D		
NB	TR	528	1626	0.337	0.325	20.0	C	20.0	C
SB	L	1003	1770	0.763	0.767	7.7	В	7.1	В
	T	1428	1863	0.067	0.767	2.2	A		
		Inte	rsection	Delay =	14.8 se	ec/veh Int	tersec	tion LOS	= B

Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.667

ICM: SIGNALIZED INTERSECTION SUMMARY Version 2.4d 04-25-1997 Center For Microcomputers In Transportation

Streets: (E-W) FM 1604 Frontage Rd (N-S) Voigt
Analyst: RAB File Name: VOI-97-P.HC9

Analyst: RAB

Area Type: Other

4-25-97 PM Peak

Comment: 1997 Existing Counts

	Ea	stbou	ınd	Wes	tbour	ıd	Nor	thbo	und	Sou	ıthbou	ınd
	L	T	R	L	\mathbf{T}	R	L	T	R	L	T	R
Ī												
_No. Lanes		2	1					1		1	1	
Volumes			153					309	53	468	73	
Lane W (ft)		12.0	12.0					12.0		12.0	12.0	_
RTOR Vols			0					2 22	0	2 00	2 00	0
Lost Time	3.00	3.00	3.00					3.00	3.00	3.00	3.00	
1			5	Signal	Oper	ation	ns					
Phase Combi	nation	1	2	3	4				5	6	7	8
EB Left		*				NB	Left	_				
Thru		*					Thru			*		
Right		*					Righ	ıt		*		
Peds							Peds					
.WB Left						SB	Left		*	*		
Thru							Thru		*	*		
Right							Righ					
Peds						770	Peds					
NB Right						EB	Righ					
SB Right	0.0	0.7				WB	Righ		03 07	0.3		
Green		. OA				100000000000000000000000000000000000000	een		OA 37			
Yellow/AR	5	.0				i ye.	llow/A	IR 5.	0 5	. 0		

			Intersect	ion Perf	ormance	Summary			
	Lane	Group:	Adj Sat	V/C	g/C	2		Approac	ch:
	Mvmts	Cap	Flow	Ratio	Ratio	Delay	LOS	Delay	LOS
EB	LT	663	3619	0.558	0.183	29.6	D	29.9	D
	R	290	1583	0.555	0.183	30.5	D		
NB	TR	533	1640	0.715	0.325	26.1	D	26.1	D
SB	L	833	1770	0.592	0.767	11.6	В	10.3	В
	T	1428	1863	0.054	0.767	2.2	A		
			ersection D			•	ersec	tion LOS	= C
T +	mima //	Curalo T	- 90 60	oc Cri	tical w/	C(V)	- O 66'	2	

Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.663

Cycle Length: 120 secs Phase combination order: #1 #5 #6

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4d 04-25-1997

Center For Microcomputers In Transportation

Streets: (E-W) FM 1604 Frontage Rd (N-S) Stone Oak Parkway Analyst: RAB File Name: ST-97-AM.HC9

Area Type: Other

4-25-97 AM Peak

Comment: 19		ting Cond	ditions		23-97 AM F6			
		tbound T R	Westbou	nd R	Northbou L T		Southbou L T	ind R
No. Lanes Volumes Lane W (ft) RTOR Vols Lost Time			12.0	1 261 12.0 0 3.00	> 2 123 207 12.0 3.00 3.00	0	2 < 587 12.0	195 0
			Signal Ope	ration	15			
Phase Combine EB Left Thru Right Peds WB Left Thru Right Peds NB Right SB Right Green Yellow/AR Cycle Length	35.(5.(1 2 * * *	3	SB EB WB Gre	Left Thru Right Peds Left Thru Right Peds Right Peds Right Right Right Seen 20.0	* * * * * OA 50.0.	7 A	8
Lane (Group: Cap	Intersec Adj Sat Flow		g/0	2	LOS	Approac Delay	ch: LOS

			Intersect	ion Perf	ormance	Summary	Y		
	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Dela	y LOS	Approac Delay	ch: Los
WB	LT	1102	3575	0.275	0.308	20.3	3 C	15.9	C
	R	818	1583	0.336	0.517	11.	1 B		
NB	LT	1730	2696	0.210	0.642	5.8	3 B	5.8	В
SB	TR	1554	3586	0.556	0.433	16.	7 C	16.7	C
		Inte	ersection	Delay =	14.3 se	ec/veh	Intersec	tion LOS	= B
Lost	Time/	Cycle, L	= 6.0 s	ec Cri	tical v/	C(X)	= 0.43	6	

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4d 04-25-1997 Center For Microcomputers In Transportation

Streets: (E-W) FM 1604 Frontage Rd (N-S) Stone Oak Parkway Analyst: RAB File Name: ST-97-PM.HC9

Area Type: Other

4-25-97 PM Peak

Comment: 1997 Existing Conditions _____ Fastbound | Westbound | Northbound | Southbound

		Eas	Thoun	1000	wes	ruodis		NOI	rendou	ına	Sol	uodnji	na
	I	ı	T :	R	L	T	R	L	T	R	· L	T	R
No. Lan Volumes Lane W RTOR Vo	(ft)				162	12.0	0		322 12.0	0		2 < 379 12.0	159 0
				S	ignal	Oper	ation	 1S					
Phase C EB Lef Thr Rig Ped WB Lef Thr Rig Ped NB Rig SB Rig Green	t u ht s t u ht s ht		* * *	2	3	4	NB SB EB WB	Left Thru Righ Peds Left Thru Righ Peds Righ	i * it s i i i i i i i i i i i i i i i i i		6 * * *	7	8
Yellow/ Cycle L				Pha	se co	mbina			AR 5.0		. 0 5		

			Intersect	ion Perf	ormance	Summary			
	Lane	Group:	Adj Sat	V/C	g/C	: 		Approac	ch:
	Mvmts	Cap	Flow	Ratio	Ratio	Delay	LOS	Delay	LOS
WB	LT	1106	3586	0.208	0.308	19.8	C	19.2	C
	R	818	1583	0.790	0.517	19.0	C		
NB	LT	1976	3079	0.283	0.642	6.1	В	6.1	В
SB	TR	1543	3561		0.433	15.0	В	15.0	В
			ersection [= B
Lost	Time/	Cycle, L	= 6.0 se	ec Cri	tical v,	/c(x)	= 0.609	5	

HCS: Unsignalized Intersections Release 2.1d SONT-97-AM.HCO Page 1 ______

Center For Microcomputers In Transportation

University of Florida

512 Weil Hall

Gainesville, FL 32611-2083

Ph: (904) 392-0378

______ Streets: (N-S) Stoneoak Parkway (E-W) Sonterra Country C

Major Street Direction.... NS

Length of Time Analyzed... 60 (min)

Analyst..... RAB

Date of Analysis..... 4/24/97

Other Information......1997 Existing Conditions: AM Peak

Two-way Stop-controlled Intersection

	Nor	thbou		Sou	ıthbo		Eas	stbou		1997	stbou	
	L	T 	R	L	Т	R	L	T	R	L	Т	R
No. Lanes Stop/Yield Volumes PHF Grade MC's (%) SU/RV's (%) CV's (%) PCE's	0 > 90 .95	2 378 .95 0	0 N	0	751 .95		11.95	C	31	0	0	0

3	Vehicle Maneuver	Critic Gap (t	_
	Left Turn Major Road Right Turn Minor Road Through Traffic Minor Left Turn Minor Road	5.50 5.50 Road 6.50 7.00	2.60

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph) Potential Capacity: (pcph) Movement Capacity: (pcph) Prob. of Queue-Free State:	,	403 865 865 0.96
Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph) Potential Capacity: (pcph) Movement Capacity: (pcph) Prob. of Queue-Free State: If Saturation Flow Rate: (pcphpl) RT Saturation Flow Rate: (pcphpl) Major LT Shared Lane Prob. of Queue-Free State:		806 633 633 0.83 3400
Step 3: TH from Minor Street	WB	EB
Conflicting Flows: (vph) Potential Capacity: (pcph) Capacity Adjustment Factor due to Impeding Movements Movement Capacity: (pcph) Prob. of Queue-Free State:		1292 191 0.81 155 1.00
Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph) Potential Capacity: (pcph) Major LT, Minor TH		1292 158
Impedance Factor: Adjusted Impedance Factor: Capacity Adjustment Factor		0.81
due to Impeding Movements Movement Capacity: (pcph)		0.81

Intersection Performance Summary

Intersection Delay = 0.9 sec/veh

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)(Avg. Total Delay sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L EB T EB R	13 0 36	128 > 155 > 865 >	342	12.3	0.5	С	12.3
NB L	105	633		6.8	0.7	В	1.3

HCS: Unsignalized Intersections Release 2.1d CC-97-PM.HCO Page 1

Lenter For Microcomputers In Transportation

University of Florida

512 Weil Hall

Gainesville, FL 32611-2083

Ph: (904) 392-0378

_____ (E-W) Sonterra Country C

Streets: (N-S) Stoneoak Parkway major Street Direction.... NS

Length of Time Analyzed... 60 (min)

Analyst..... RAB

Date of Analysis..... 4/24/97

Other Information......1997 Existing Conditions:PM Peak

Two-way Stop-controlled Intersection

	No L	rthbou T	ind R	Son	uthk T	oui	nd R	E	as	tbo T	un	i R	We L	stbou T	ind R
No. Lanes Stop/Yield Volumes PHF Grade MC's (%) SU/RV's (%) CV's (%) PCE's	116 .95	.95	0 N	0	45		0 N 19 .95	.9	8 5	. 9	0 5 0	0 82 .95	0	0	0

1	Vehicle Maneuver		Critical Gap (tg)	Follow-up Time (tf)
1	Left Turn Major Road Right Turn Minor Road Through Traffic Minor Left Turn Minor Road	Road	5.50 5.50 6.50 7.00	2.10 2.60 3.30 3.40

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph) Potential Capacity: (pcph) Movement Capacity: (pcph) Prob. of Queue-Free State:		250 1034 1034 0.91
Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph) Potential Capacity: (pcph) Movement Capacity: (pcph) Prob. of Queue-Free State: TH Saturation Flow Rate: (pcphpl) RT Saturation Flow Rate: (pcphpl) Major LT Shared Lane Prob. of Queue-Free State:		500 924 924 0.85 3400
Step 3: TH from Minor Street	WB	EB
Conflicting Flows: (vph) Potential Capacity: (pcph) Capacity Adjustment Factor due to Impeding Movements Movement Capacity: (pcph) Prob. of Queue-Free State:		1475 150 0.81 121 1.00
Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph) Potential Capacity: (pcph) Major LT, Minor TH		1475 121
Impedance Factor: Adjusted Impedance Factor: Capacity Adjustment Factor		0.81
due to Impeding Movements Movement Capacity: (pcph)		0.81 97

HCS:	Unsignalized	Intersections	Release 2.1d	CC-97-PM.HC0	Page 3

Intersection Performance Summary

	ement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph) (Avg. Total Delay sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB EB EB	L T R	9 0 95	97 > 121 > 1034 >	563	7.8	0.8	В	7.8
NB	L	134	924		4.6	0.5	A	0.6

Intersection Delay = 0.8 sec/veh

HCS: Unsignalized Intersections Release 2.1d HEU-97-A.HCO Page 1

Larter & Burgess, Inc. 1717 West Sixth Street

Suite 210

Austin, TX 78703--477

Ph: (512) 474-9445

Streets: (N-S) Stoneoak Parkway (E-W) Huebner Major Street Direction.... EW

Length of Time Analyzed... 60 (min)

Analyst..... RAB

Date of Analysis..... 4/24/97

Other Information...... 1997 Existing Conditions: AM Peak-North/ South Analysis

Two-way Stop-controlled Intersection

_=========	Eas	tboun	 d	Wes	tbou	 nd	No	rthbou	ind	Sou	ıthbou	ind
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2 <	0	1	2	< 0	1	2 <	< 0	1	2 <	0
Stop/Yield	_	_	N	_	_	N	_	_		_	_	
Volumes	89	15	84	68	16	10	71	248	70	89	613	107
PHF	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
Grade MC's (%)		O			U			0			0	
SU/RV's (%)												
CV's (%)								1 10	1 10	1 10	1 10	1 10
PCE's	1.10			1.10			11.10	1.10	1.10	1.10	1.10	1.10

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
, Left Turn Minor Road	7.00	3.40

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph) Potential Capacity: (pcph) Movement Capacity: (pcph) Prob. of Queue-Free State:	52 1303 1303 0.94	14 1362 1362 0.91
Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph) Potential Capacity: (pcph) Movement Capacity: (pcph) Prob. of Queue-Free State:	104 1507 1507 0.95	28 1656 1656 0.94
Step 3: TH from Minor Street	NB	SB
Conflicting Flows: (vph) Potential Capacity: (pcph) Capacity Adjustment Factor	254 775	292 736
due to Impeding Movements Movement Capacity: (pcph) Prob. of Queue-Free State:	0.89 689 0.58	0.89 654 0.00
Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph) Potential Capacity: (pcph) Major LT, Minor TH	566 460	335 647
Impedance Factor: Adjusted Impedance Factor: Capacity Adjustment Factor	0.00	0.52 0.62
due to Impeding Movements Movement Capacity: (pcph)	0.00	0.58 377

Intersection Performance Summary

OSMIX .	Mov	ement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
THE STREET	NB NB	L T	83 287	0 6 89 >	>	*	*	F	*
9	NB	R	81	1303 >	769	9.0	3.0	В	
	SB SB	L T	103 710	377 654 >	•	13.1	1.3	С	315.9
	SB	R	124	1362 >	709	353.3	76.0	F	32013
	EB WB	L L	103 79	1656 1507		2.3	0.1	A A	1.1

HCS: Unsignalized Intersections Release 2.1d HEU-97-A.HCO Page 1

Carter & Burgess, Inc. 1717 West Sixth Street

Suite 210

Austin, TX 78703--477

Ph: (512) 474-9445

Streets: (N-S) Stoneoak Parkway (E-W) Huebner

Major Street Direction.... NS

Length of Time Analyzed... 60 (min)

Analyst..... RAB

Date of Analysis..... 4/24/97

Other Information...... 1997 Existing Conditions: AM Peak-East/W

est Analysis

Two-way Stop-controlled Intersection

	Nor	thbou	nd	Sou	thbou	nd	Eas	tbour	nd	Wes	tbour	==== id
ì	L	T	R	L	${f T}$	R	L	\mathbf{T}	R	L	${f T}$	R
No. Lanes	1	2 <	0	1	2 <	0	1	2 <	< 0	1	2 <	0
Stop/Yield			N			N						
Volumes	71	248	70	89	613	107	89	15	84	68	16	10
PHF	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
Grade		0			0			0			0	
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's	1.10			1.10			1.10	1.10	1.10	1.10	1.10	1.10

	Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
	Left Turn Major Road Right Turn Minor Road	5.50 5.50	2.10
	Through Traffic Minor Road	6.50	3.30
1	Left Turn Minor Road	7.00	3.40

Step 1: RT from Minor Street	WB	EB
onflicting Flows: (vph) Potential Capacity: (pcph) Movement Capacity: (pcph) rob. of Queue-Free State:	168 1138 1138 0.99	379 890 890 0.89
Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph) Potential Capacity: (pcph) Covement Capacity: (pcph) Prob. of Queue-Free State:	335 1133 1133 0.91	758 672 672 0.88
Step 3: TH from Minor Street	WB	EB
Conflicting Flows: (vph) Potential Capacity: (pcph) Capacity Adjustment Factor	1225 209	1206 215
due to Impeding Movements Movement Capacity: (pcph) Prob. of Queue-Free State:	0.80 167 0.89	0.80 171 0.89
Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph) Potential Capacity: (pcph) Major LT, Minor TH	1120 204	1140
Impedance Factor: Adjusted Impedance Factor: Capacity Adjustment Factor	0.71 0.78	0.71 0.77
due to Impeding Movements Movement Capacity: (pcph)	0.69 141	0.76 151

Intersection Performance Summary

	Move	ement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph) (Avg. Total Delay sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
	EB EB	L T	103 18	151 171 >	>	71.1	5.1	F	38.1
ari	EB	R	97	890 >		8.5	0.9	В	30.1
J	WB WB	L T	79 19	141 167 >	•	56.8	3.5	F	45.7
	WB	R	12	1138 >		16.5	0.4	С	45.7
	NB SB	L L	83 103	672 1133		6.1 3.5	0.4	B A	1.1

Intersection Delay = 8.3 sec/veh

HCS: Unsignalized Intersections Release 2.1d HEU-97-P.HCO Page 1

Carter & Burgess, Inc. 1717 West Sixth Street

Suite 210

Austin, TX 78703--477

Ph: (512) 474-9445

Streets: (N-S) Stoneoak Parkway (E-W) Huebner

Major Street Direction... NS
Length of Time Analyzed... 60 (min)

Analyst..... RAB

Date of Analysis..... 4/24/97

Other Information...... 1997 Existing Conditions:PM Peak-East/W

est Analysis

Two-way Stop-controlled Intersection

	Nor L	thbour T	nd R	Sou	thbou T	ind R	Eas L	stbour T	nd R	Wes	stbour T	nd R
No. Lanes Stop/Yield	1	2 <	0 N	1	2 <	0 N	1	2 <	0	1	2 <	< 0
Volumes PHF Grade	173 .95	438 .95 0	217	36 .95	332 .95 0	78 .95	53 .95	9 .95 0	91 .95	52 .95	9 .95 0	44 .95
MC's (%) SU/RV's (%) CV's (%)					10 - 20		2					
PCE's	1.10			1.10			1.10	1.10	1.10	1.10	1.10	1.10

Vehicle	Critical	Follow-up		
Maneuver	Gap (tg)	Time (tf)		
Left Turn Major Road	5.50	2.10		
Right Turn Minor Road	5.50	2.60		
Through Traffic Minor Road	6.50	3.30		
Left Turn Minor Road	7.00	3.40		

Step 1: RT from Minor S	treet WB	EB
Conflicting Flows: (vph Potential Capacity: (pc Movement Capacity: (pcp Prob. of Queue-Free Star	ph) 927 h) 927	216 1076 1076 0.90
Step 2: LT from Major S	treet SB	NB
Conflicting Flows: (vph Potential Capacity: (pc Movement Capacity: (pcp Prob. of Queue-Free Star	ph) 731 h) 731	431 1006 1006 0.80
Step 3: TH from Minor S	treet WB	EB
Conflicting Flows: (vph Potential Capacity: (pc Capacity Adjustment Fac	ph) 209	1299 190
due to Impeding Movement Movement Capacity: (pcp. Prob. of Queue-Free Star	nts 0.76 h) 158	0.76 143 0.93
Step 4: LT from Minor S	treet WB	EB
Conflicting Flows: (vph Potential Capacity: (pc Major LT, Minor TH) 1149 ph) 195	1075 218
Impedance Factor: Adjusted Impedance Factor Capacity Adjustment Factor	0.70 or: 0.77 tor	0.71 0.77
due to Impeding Movement Movement Capacity: (pcp.	nts 0.69	0.73 159

Intersection Performance Summary

	Mov	ement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph) (Avg. Total Delay sec/veh)	95% Queue Length (veh)	Los	Approach Delay (sec/veh)
	EB EB	L T	6 2 10	159 143	>	36.9	2.0	E	16.9
	EB	R	106	1076	> 689	6.3	0.7	В	
	WB WB	L T	61 10	135 158	>	48.2	2.4	F	27.9
	WB	R	51	927	> 516	7.9	0.4	В	
5	NB SB	L L	200 42	1006 731		4.5 5.2	0.8	A B	0.9

Intersection Delay = 4.2 sec/veh

MCS: Unsignalized Intersections Release 2.1d HEU-97-P.HC0 Page 1

Marter & Burgess, Inc. 1717 West Sixth Street

uite 210

ustin, TX 78703--477 Ph: (512) 474-9445

treets: (N-S) Stoneoak Parkway (E-W) Huebner Major Street Direction.... EW

Length of Time Analyzed... 60 (min)

Analyst..... RAB

■Date of Analysis..... 4/24/97

Other Information...... 1997 Existing Conditions:PM Peak-North/ South Analysis

Two-way Stop-controlled Intersection

	Eas L	tboun T	d R	Wes	tbo T	und	l R	No:	rthbo T	oui	nd R	Son	uthbo T	und R
No. Lanes Stop/Yield	1	2 <	0 N	1	2	<	0 N	1	2	<	0	1	2	< 0
Volumes PHF Grade MC's (%) SU/RV's (%) CV's (%)	53 .95	9 .95 0	91 .95	52 .95	.9	9 5 0	44.95	173 .95	438		217.95	36 .95	332 .95 0	78 .95
PCE's	1.10			1.10				1.10	1.10)]	1.10	1.10	1.10	1.10

Vehicle	Critical	Follow-up
Maneuver	Gap (tg)	Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

NB	SB
52 1303 1303 0.81	28 1340 1340 0.93
WB	EB
105 1506 1506 0.96	55 1602 1602 0.96
NB	SB
223 808	248 781
0.92 745 0.32	0.92 720 0.47
NB	SB
352 631	382 603
0.43 0.55	0.29
0.51 323	0.35 208
	52 1303 1303 0.81 WB 105 1506 1506 0.96 NB 223 808 0.92 745 0.32 NB 352 631 0.43 0.55 0.51

Intersection Performance Summary

Mov	ement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph) (Avg. Total Delay sec/veh)	95% Queue Length (veh)	Los	Approach Delay (sec/veh)
NB NB	 L T	200	323 745	>	28.8	4.7	D	29.6
NB	R	251	1303	> 868	29.8	15.8	D	
SB SB	L T	42 384	208 720	>	21.7	0.8	D	1 2. 2
SB	R	90	1340	OSERVATE GEO	11.4	4.7	C	
EB WB	L L	6 2 61	1602 1506		2.3	0.0	A A	0.8

Intersection Delay = 19.7 sec/veh

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4d 09-09-1997 Center For Microcomputers In Transportation

Streets: (E-W) FM 1604 Frontage Rd.

Analyst: RAB

Area Type: Other Comment: 2006 Projected Conditions (N-S) Voight

File Name: VOI-06-A.HC9

9-1-97 AM peak

	E	astbo	ınd	Westbound			No	rthbo	und	Southbound		
	L	T	R	L	T	R	L	${f T}$	R	L	T	R
No. Lanes	1 >	> 2 <	<					1	1	1 >	> 1	
Volumes	575		112					314	46	1227	158	
Lane W (ft)	12.0	12.0						12.0	12.0	12.0	12.0	
RTOR Vols			12						5			0
Lost Time	3.00	3.00	3.00					3.00	3.00	3.00	3.00	

			S	ignal	Opera:	tion	s				
Pha	se Combination	n 1	2	3	4			5	6	7	8
EB	Left	*				NB	Left				
	Thru	*					Thru		*		
	Right	*					Right		*		
	Peds						Peds				
WB	Left					SB	Left	*			
	Thru						Thru	*			
	Right						Right				
	Peds						Peds				
NB	Right					EB	Right				
SB	Right					WB	Right				
Gre	en 2	5.0A				Gre	en 50	0.0A	30.0A		
	PERSONAL GENERALS	5.0				Yel	low/AR 5	5.0	5.0		
Cyc	le Length: 12	0 secs	Pha	se com	nbinati	ion	order: #	1 #5	#6		

Intersection Performance Summary											
	Lane	Group:	Adj Sat	v/c	g/C	_		Approac	ch:		
	Mvmts	Cap	Flow	Ratio	Ratio	Delay	LOS	Delay	LOS		
EB	L	398	1770	0.758	0.225	33.7	D	31.5	D		
	LTR	793	3523	0.733	0.225	30.3	D				
NB	T	497	1863	0.666	0.267	27.7	D	27.0	D		
	R	422	1583	0.102	0.267	21.4	C		_		
SB	L	767	1770	0.927	0.433	33.3	D	36.0	D		
	LT	777	1793	0.961	0.433	38.5	D				
		Inte	ersection	Delay =	33.3 se	c/veh Int	ersec	tion LOS	= D		

Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.827

Streets: (E-W) FM 1604 Frontage Rd. (N-S) Voight
Analyst: RAB File Name: VOI-06-P.HC9

Area Type: Other

9-1-97 PM peak

Comment: 2006 Projected Conditions

	E	astbo	und	Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes Volumes Lane W (ft) RTOR Vols Lost Time	348		209						1 72 12.0 7 3.00	12.0		0
				Signal	One	 ration						

	Sic	mal Or	peration	C				
	_		peracion	5				
Phase Combination 1	. 2	3	4		5	6 .	7 8	3
EB Left *			NB	Left				
Thru *				Thru		*		
Right *				Right		*		
Peds				Peds				
WB Left			SB	Left	*			
Thru				Thru	*			
Right				Right				
Peds			1	Peds				
NB Right			EB	Right				
SB Right			WB	Right				
Green 20.0	A		Gre	en 54.	OA 31.0	ΟA		
Yellow/AR 5.0			Yel	low/AR 5.	0 5.0)		
Cycle Length: 120 s	ecs Phase	combi	nation (order: #1	#5 #6			

Intersection Performance Summary												
		Lane	Group:	Adj Sat	v/c	g/C	1		Approac	ch:		
		Mvmts	Cap	Flow	Ratio	Ratio	Delay	LOS	Delay	LOS		
	EB	L	324	1770	0.844	0.183	43.0	E	39.6	D		
		LTR	633	3453	0.845	0.183	37.8	D				
	NB	T	512	1863	0.976	0.275	52.9	E	49.1	E		
		R	435	1583	0.159	0.275	21.3	C				
	SB	L	826	1770	0.955	0.467	35.4	D	35.9	D		
		LT	838	1796	0.962	0.467	36.4	D				
			Inte	ersection I	Delay =	39.4 se	c/veh Int	tersect	tion LOS	= D		
	Toct	Timo/	TICLO I.	- 9 0 00	o Coni	+i an 7/	~ / * * 1	0 04				

Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.943

Streets: (E-W) FM 1604 Frontage Rd.

(N-S) Stone Oak Parkway File Name: STO-06-A.HC9

Analyst: RAB

9-1-97 AM peak

Area Type: Other

Comment: 2006 Projected Conditions

	Eastbound L T R	Westbound L T R	Northbound L T R	Southbound L T R
No. Lanes Volumes Lane W (ft) RTOR Vols Lost Time		> 2 < 1 477 114 486 12.0 12.0 36 3.00 3.00 3.00	12.0	2 < 968 318 12.0 34 3.00 3.00

				Signal	Opera	tion	s				
Pha	se Combina	tion 1	2	3	4			5	6	7	8
EB	Left					NB	Left	*	*		
	Thru						Thru	*	*		
	Right						Right				
	Peds						Peds				
WB	Left	*				SB	Left				
	Thru	*					Thru	*			
	Right	*					Right	*			
110	Peds						Peds				
NB	Right					EB	Right				
	Right	40.03				WB	Right				
Gree		40.0A				Gre			10.0A		
	Low/AR	5.0	7.1				low/AR 5				
Cyc.	le Length:	120 Secs	Pna	ise cor	nbinati	lon	order: #	1 #5	#6		

			Intersect:	ion Perf	ormance	Summary			
	Lane	Group:	Adj Sat	V/C	g/C			Approac	ch:
	Mvmts	Cap	Flow	Ratio	Ratio	Delay	LOS	Delay	Los
WB	LTR	1213	3465	0.756	0.350	24.2	C	23.3	C
	R	554	1583	0.402	0.350	19.3	C		
NB	LT	2171	3618	0.483	0.600	8.9	В	8.9	В
SB	TR	1710	3599	0.810	0.475	19.5	C	19.5	C
		Inte	ersection D	Delay =	17.6 se	c/veh In	tersect	tion LOS	= C
Lost	Time/C	Cycle, L	= 6.0 se	c Cri	tical v/	c(x) :	= 0.584		

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4d 09-10-1997 Center For Microcomputers In Transportation

Streets: (E-W) FM 1604 Frontage Rd. (N-S) Stone Oak Parkway Analyst: RAB File Name: STO-06-P.HC9

Area Type: Other

9-1-97 PM peak

Comment: 2006 Projected Conditions

	E	astbo	und	Westbound			North	S	Southbound		
	L	T	R	L	T	R	L I	R	L	T	R
No. Lanes Volumes Lane W (ft) RTOR Vols Lost Time				610	154 12.0	<pre></pre>		573 2.0	0	906 12.0	45
			5	Signal	L Ope	ration	ns				
Phase Combir	nation	n 1	2	3	-	1		5	6	7	8
EB Left						NB	Left	*	*		
Thru							Thru	*	*		
Right Peds							Right				
WB Left		*				SB	Peds Left				

Thru Thru * Right Right * Peds Peds NB Right EB Right SB Right WB Right

Green 50.0A Yellow/AR 5.0 Green 48.0A 7.0P Yellow/AR 5.0 5.0 Cycle Length: 120 secs Phase combination order: #1 #5 #6

			Intersect	ion Perf	ormance :	Summary						
	Lane	Group:	Adj Sat	V/C	g/C			Approac	ch:			
	Mvmts	Cap	Flow	Ratio	Ratio	Delay	LOS	Delay	LOS			
WB	LTR	1508	3479	0.752	0.433	20.0	C	20.5	C			
	R	686	1583	0.746	0.433	21.5	C					
NB	LT	1831	3544	0.497	0.517	12.4	В	12.4	В			
SB	TR	1481	3554	0.977	0.417	35.9	D	35.9	D			
		Int	ersection I	Delay =	24.2 sed	c/veh Int	cersect	tion LOS	= C			
Lost	Time/	Cycle, L	= 6.0 se	ec Cri	tical v/d	c(x) =	0.613	3				

Streets: (E-W) Sonterra CC/Sonterra (N-S) Stone Oak Parkway

Analyst: RAMArea Type: Comment: 20	ne: SCC- M peak								
	Eastbour L T	nd I	Westbour T	ıd R	Nor L	thbound T R		uthbou T	und R
No. Lanes Volumes Lane W (ft) RTOR Vols Lost Time	> 1 15 10 12.0 1 3.00 3.00 3	12.0 12.	72 10 .0 12.0	12.0	12.0	12.0	12.0	12.0	19
Phase Combine EB Left Thru Right Peds WB Left Thru Right			nal Oper 3 4	ation	ıs	5 * t	6 * * * * * * *	7	8
Peds NB Right SB Right Green Yellow/AR Cycle Length	: 120 secs	.0 Phase rsectio	n Perfo	WB Gre Yel tion 	Peds Right Right en low/Al order: e Summ	t * 46.0A 4 R 5.0 : #1 #2	5.0 #5 #6		
Zane o	2025	2 2 2	- 1, 0	g/C			AI	proac	:n:

			Intersec	tion Perf	Summary				
	Lane	Group:	Adj Sat	V/C	g/C	-		Approa	ch:
	Mvmts	Cap	Flow	Ratio	Ratio	Delay	LOS	Delay	LOS
EB	LT	136	1809	0.199	0.075	33.8	D	34.3	D
	R	119	1583	0.337	0.075	34.7	D		
WB	L	133	1770	0.693	0.075	44.5	E	28.0	D
	LT	134	1784	0.747	0.075	48.5	E		_
	R	752	1583	0.310	0.475	12.6	В		
NB	L	770	1770	0.086	0.775	6.0	В	39.5	D
	TR	1203	3436	0.983	0.350	41.4	E	2 5 5 5	
SB	L	770	1770	0.969	0.775	38.4	D	32.9	D
	TR	1300	3715	0.887	0.350	29.3	D		_
	124	Inte	ersection	Delay =	34.6 se	c/veh In	tersect	cion LOS	= D

Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.917

Streets: (E-W) Sonterra CC/Sonterra

Area Type: Other

Analyst: RAB

Comment: 2006 Projected Conditions

(N-S) Stone Oak Parkway File Name: SCC-06-P.HC9

9-1-97 PM peak

				====		=====	=====		=====	=====	====:	====
	E	astbo	und	We	stbou	nd	No	rthbo	und	Son	uthbou	und
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes		> 1	1	1	> 1	1	1	2 .	<	1	2 <	<
Volumes	11	10	138	000	10			1118	206	261	621	26
Lane W (ft)		12.0	12.0	12.0	12.0	12.0	12.0	12.0		12.0	12.0	
RTOR Vols	Description Contractor		30			62			39			0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
				71.000								
				orgna.	l Opei	ration	ıs					
Phase Combin	nation	n 1	2	3	4	1			5	6	7	8
EB Left			*			NB	Left		k	*		
Thru			4			1	mi	04		1020		

	91 8	12 90	SI	gnai	Obergi	CTOIL	S				
Phas	se Combina	tion 1	2	3	4			5	6	7	8
EB	Left		*			NB	Left	*	*		
	Thru		*				Thru		*		
	Right		*				Right		*		
	Peds						Peds				
WB	Left	*				SB	Left	*	*		
	Thru	*					Thru		*		
	Right	*					Right		*		
	Peds						Peds				
NB	Right					EB	Right				
SB	Right					WB	Right	*			
Gree	en	25.0A	9.0A			Gree	_	. 0A	50.0A		
	ow/AR	5.0	5.0			Yel:	low/AR 5	. 0	5.0		
Cyc]	e Length:	120 secs	s Phase	e com	binati	ion o	order: #	1 #2	#5 #6		

			Interceat	ion Dome		G			
	Lane	Croup.	Intersect Adj Sat			Summary		-	
		Group:	-	V/C	g/C			Approa	ch:
	Mvmts	Cap	Flow	Ratio	Ratio	Delay	LOS	Delay	LOS
EB	LT	166	1815	0.138	0.092	32.4	D	46.8	E
	R	145	1583	0.779	0.092	49.7	E		
WB	L	398	1770	0.766	0.225	34.1	D	38.5	D
	LT	400	1777	0.763	0.225	33.9	D		
	R	594	1583	0.959	0.375	43.4	E		
NB	L	386	1770	0.267	0.608	7.5	В	24.4	C
	TR	1583	3653	0.898	0.433	25.6	D		
SB	L	327	1770	0.841	0.608	35.3	D	21.0	C
	TR	1605	3703	0.446	0.433	15.6	C		
		Int	ersection	Delay =	28.7 se	c/veh Int	tersect	cion LOS	= D

Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.911

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4d 09-08-1997 Center For Microcomputers In Transportation

Streets: (E-W) Heubner

Analyst: RAB
Area Type: Other

(N-S) Stone Oak Parkway File Name: HEU-06-A.HC9

9-1-97 AM peak

Comment: 2006 Projected Conditions

					====	=====	====	=====	====	=====	====
	East	bound R	We:	stbour T	nd R	Nor L	thbo	und R	Sou	uthbou T	ind R
No. Lanes Volumes Lane W (ft)	1 2 121 12.0 12	20 201	1 158	2 < 22 12.0	14		2 494		The second secon	1442	146
RTOR Vols	3.00 3.	0			0	12.0		3 00		12.0	0
									13.00	3.00	3.00
		9	Signal	l Oper	ation	ns					
Phase Combi	nation 1		3	- 4	1			5	6	7	8
EB Left	*				NB	Left		k	*		
Thru	*					Thru	l		*		
Right	*					Righ	t		*		
Peds						Peds					
WB Left	*				SB	Left	,	k	*		
Thru	*					Thru			*		
Right	*					Righ	t		*		
Peds						Peds	ŀ				
NB Right					EB	Righ	t				
SB Right					WB	Righ	t				
Green	10.0				Gre	een	7.0	DA 28.	OA		
Yellow/AR	5.0					llow/A			. 0		
Cycle Length	n: 60 s	ecs Pha	se co	ombina	tion	order	: #1	#5 #6	5		

	Lane	Group:	Intersecti	ormance g/C	Summary		Approac	ah .	
	Mvmts	Cap	Flow	v/c Ratio	Ratio	Delay	LOS	Delay	LOS
EB	L	316	1579	0.402	0.200	14.0	В	13.7	В
	TR	643	3217	0.381	0.200	13.6	В		
WB	L	192	961	0.864	0.200	36.2	D	31.6	D
	TR	701	3505	0.057	0.200	12.5	В		
NB	L	390	1770	0.369	0.700	7.0	В	6.2	В
	TR	1803	3606	0.385	0.500	6.1	В	500 50 50 0	_
SB	L	437	1770	0.291	0.700	2.4	A	17.3	С
	TR	1837	3674	0.956	0.500	18.3	C		
		Inte	ersection I	elay =	15.0 se	c/veh Int	ersect	tion LOS	= B
Toat	mimo/	T of Day		-		(-/)			

Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.861

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4d 09-12-1997

Center For Microcomputers In Transportation

Streets: (E-W) Heubner

Analyst: RAB Area Type: Other (N-S) Stone Oak Parkway File Name: HEU-06-P.HC9

9-1-97 PM peak

Comment: 2006 Projected Conditions

	===== Fa	===== astbou	===== ind	===== Wes	===== stbour	-==== nd	l Nor	thbou	ind	Sou	ıthboı	ind
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2 <	<	1	2 <	<	1	2 <	<	1	2 <	
Volumes	72	12	186	107	22	60	354	919	448	49	666	106
Lane W (ft)	12.0	12.0		12.0	12.0		12.0	12.0	_	12.0	12.0	•
RTOR Vols			0			0			0			0
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

				Signal	Operat	cions	S				
Phas	se Combinati	on 1	2	3	4			5	6	7	8
EB	Left	*				NB	Left	*	*		
10	Thru	*					Thru		*		
	Right	*					Right		*		
	Peds						Peds				
WB	Left	*				SB	Left	*	*		
WD	Thru	*					Thru		*		
	Right	*					Right		*		
	Peds						Peds				
NB	Right					EB	Right				
SB	Right					WB	Right				
Gree		10.0A				Gre	-	7.0A	28.0A		
	low/AR	5.0				Yel	low/AR	5.0	5.0		
		60 secs	Ph	nase con	mbinat				#6		
Cyc.	re nengen.										

			Intersect	ion Perf	ormance	Summary			-
	Lane Mvmts	Group: Cap	Adj Sat Flow			Delay	LOS	Approad Delay	LOS
EB	 L	278	1388	0.274	0.200	13.3	В	13.4	В
110	TR	640	3201	0.342	0.200	13.4	В		
WB	L	209	1045	0.541	0.200	16.1	C	14.6	В
	TR	663	3316	0.136	0.200	12.8	В		
NB	L	390	1770	0.956	0.700	34.2	D	16.0	C
	TR	1771	3542	0.853	0.500	11.5	В		
SB	L	390	1770	0.133	0.700	4.6	A	6.4	В
	TR	1824	3649	0.468	0.500	6.5	В		
		Int	ersection	Delay =	13.0 se	ec/veh In	tersec	tion LOS	= B

Intersection Delay = 13.0 sec/ven Intersection Los = Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 0.813

HCS: Unsignalized Intersections Release 2.1d SIG-06-A.HCO Page 1

Center For Microcomputers In Transportation

University of Florida

512 Weil Hall

Gainesville, FL 32611-2083

Ph: (904) 392-0378

______ (E-W) FM 1604 WB Frontage

Streets: (N-S) Sigma Drive

Major Street Direction... EW

Length of Time Analyzed... 60 (min)

Analyst..... Rab Date of Analysis..... 9/9/97

Other Information.....2006 Projected Volumes

Two-way Stop-controlled Intersection

=======	Ea	stbou		1	==== stbc		No	==== rthbo		So	uthbo	===== und
		T 	R 	L	T 	R 		T 	R		T	R
No. Lanes Stop/Yield	0	0	0 N	0	3	< 0 N	0	0	0	0	0	1
Volumes PHF					96	5 .95	1					118 .95
Grade MC's (%) SU/RV's (%) CV's (%)						0					0	
PCE's												1.10

Vehicle	Critical	Follow-up
Maneuver	Gap (tg)	Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

HCS:	Unsignalized	Intersections	Release 2.1d	SIG-06-A.HC0	Page 2

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)		598
Potential Capacity: (pcph)		689
Movement Capacity: (pcph)		689
Prob. of Queue-Free State:		0.80

Intersection Performance Summary

Mov	ement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph) (Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)	
								6.5	
SB	R	136	689		6.5	0.8	В		

Intersection Delay = 0.5 sec/veh

HCS: Unsignalized Intersections Release 2.1d SIG-06-P.HC0 Page 1

Center For Microcomputers In Transportation

University of Florida

512 Weil Hall

Gainesville, FL 32611-2083

Ph: (904) 392-0378

Streets: (N-S) Sigma Drive (E-W) FM 1604 WB Frontage

Major Street Direction.... EW

Length of Time Analyzed... 60 (min)

Analyst..... Rab

Date of Analysis..... 9/9/97

Other Information......2006 Projected Volumes: PM Peak

Two-way Stop-controlled Intersection

	Eas	stbou	 nd	Westbound		Northbound			Southbound				
	L	T	R	L	\mathbf{T}		R	L	T	R	L	\mathbf{T}	R
No. Lanes Stop/Yield	0	0	0 N	0	3	<	0 N	0	0	0	0	0	1
Volumes PHF Grade MC's (%)					142 .9		.95					0	340 .95
SU/RV's (%) CV's (%) PCE's										a .			1.10

Vehicle	Critical	Follow-up
Maneuver	Gap (tg)	Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

HCS:	Unsignalized	Intersections	Release	2.1d	SIG-06-P.HC0	Page	2				

Step 1: RT from Minor Street	NB SB			
Conflicting Flows: (vph)	606			
Potential Capacity: (pcph)	683			
Movement Capacity: (pcph)	683			
Prob. of Queue-Free State:	0.42			

Intersection Performance Summary

				Avg.	95%			
	Flo	w Move	Share	d Total	Queue		Approach	
	Rat	ce Cap	Cap	Delay	Length	LOS	Delay	
Movemen	nt (pcr	oh) (pcph	(pcph)	(sec/veh)	(veh)		(sec/veh)	
							12.4	
SB R	39	683		12.4	4.2	C		

Intersection Delay = 2.1 sec/veh

HCS: Unsignalized Intersections Release 2.1d GAM-06-A.HCO Page 1

Center For Microcomputers In Transportation

University of Florida

512 Weil Hall

Gainesville, FL 32611-2083

Ph: (904) 392-0378

______ Streets: (N-S) Gamma Drive

(E-W) FM 1604 WB Frontage

Major Street Direction.... EW

Length of Time Analyzed... 60 (min)

Analyst..... Rab Date of Analysis..... 9/9/97

Other Information......2006 Projected Volumes: AM Peak

Two-way Stop-controlled Intersection

	Eas	stbou		Wes	stbo	unc	i 1	No	 rthbo	und	So	uthbo	und
	L	T 	R 	L	T 		R	L	T 	R	L	T	R
No. Lanes Stop/Yield	0	0	0 N	0	3	<	0 N	0	0	0	0	0	1
Volumes PHF Grade MC's (%) SU/RV's (%) CV's (%)					86.9		491.95					0	208
PCE's													1.10

Vehicle	Critical	Follow-up
Maneuver	Gap (tg)	Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Roa	d 6.50	3.30
Left Turn Minor Road	7.00	3.40

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Worksheet for TWSC Int	tersection		10
Step 1: RT from Minor Street	NB	SB	
Conflicting Flows: (vph) Potential Capacity: (pcph) Movement Capacity: (pcph) Prob. of Queue-Free State:		560 720 720 0.67	
	erformance Summan		

Movem	nent	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph) (Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
SB F	2	241	720		7.5	1.7	В	7.5

Intersection Delay = 1.0 sec/veh

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Center For Microcomputers In Transportation

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Streets: (N-S) Gamma Drive

(E-W) FM 1604 WB Frontage

Major Street Direction.... EW

Length of Time Analyzed... 60 (min)

Analyst..... Rab
Date of Analysis..... 9/9/97

Other Information......2006 Projected Volumes: PM Peak

Two-way Stop-controlled Intersection

========	Eas	stbou		650.00	Westbound		Northbound		Southbound		und		
	L	T 	R 	L	T 			L	T 	R	L	T	R
No. Lanes Stop/Yield	0	0	0 N	0	3	< 0	N	0	0	0	0	0	1
Volumes PHF Grade MC's (%)					118 .9		92 95	3				0	340 .95
SU/RV's (%) CV's (%) PCE's													1.10

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road Right Turn Minor Road	5.50 5.50	2.10
Through Traffic Minor Road Left Turn Minor Road	6.50 7.00	3.30

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Step 1: RT from Minor Street	NB	SB								
- 63' 1' 73 ())										
Conflicting Flows: (vph)		568								
Potential Capacity: (pcph)		714								
Movement Capacity: (pcph)		714								
		114								
Prob. of Queue-Free State:		0.45								

Intersection Performance Summary

Movemen	Flow Rate at (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)	
SB R	394	714		11.2	3.9	С	11.2	

Intersection Delay = 2.1 sec/veh